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Compiled by the „Sub-Department of Commerce“
of the Department of Agriculture, Industry &
Commerce at Buitenzorg, Java.

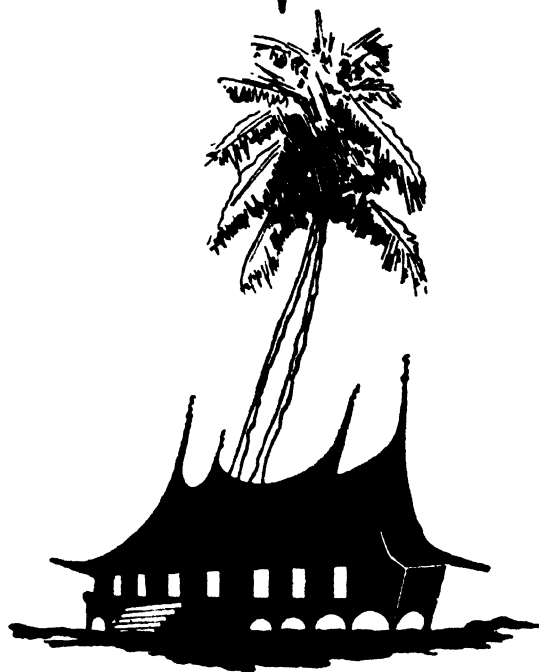


The mountain lake Telaga Warna near the Poentjak-pass



YEARBOOK
OF THE
NETHERLANDS
EAST-INDIES

VERVOORT



EDITION 1920

PREFACE

When the first edition of the Yearbook of the Netherlands East-Indies, published in 1916, was compiled at the request of the Dutch East Indian Government by the Division of Commerce of the Department of Agriculture, Industry & Commerce at Buitenzorg, and it soon appeared to provide for an existing need, it was planned to follow this, before too long a time, by a second, more complete edition.

That this plan is only now being put into execution is due to the abnormal time circumstances, which brought so many activities that at first no opportunity could be found for the compiling of the Yearbook.

The second edition, which now comes out, differs in many respects from that of 1916. For the purpose, which was also the main object of the latter edition, namely to give the public both in Holland and in foreign countries a general idea of the conditions prevailing in the colony and of the results achieved by Holland as a colonial power, much that was dealt with in 1916 seemed superfluous. The brief historical review, which was adjoined in that first edition to various subjects, is now, as being of less importance to the general reader, either very much condensed or omitted entirely. For the same reason, figures are only given, where they seem indispensable to correct insight, and even then, as a rule, they are limited as much as possible.

In this respect the Netherlands East Indian Yearbook differs considerably from the yearbooks published in other countries, which often contain chiefly statistical material. Those interested in statistical data, concerning the Dutch East-Indies, may therefore be referred to the yearbooks published in this country by various departments and services, wherein such figures are found more completely than is possible in a general yearbook.

The greater or less extensiveness of the articles found in this edition in general bears no relation to the importance of the subject under discussion. It is namely the intention to treat various subjects more in detail in succeeding yearbooks, so that in the course of time a set of yearbooks will contain a more complete representation of several important branches of service.

As an example of somewhat more detailed treatment may serve the chapter in this Yearbook, concerning the Harbour system, which was excerpted from a description of the Dutch East Indian harbours contributed by Mr. Wouter Cool, which description appears as the first part of a complete study, to be published before long, regarding these harbours and which is being compiled by the technical division for harbour affairs of the Department of Civil Public Works.

Like the edition of 1916 this Yearbook is published in Dutch as well as in English. This Yearbook, also, is merely an attempt to arrive at an edition, which will answer all requirements. The time circumstances, referred to above, allowed only a short time for preparation.

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*Some of the weights, measures and coins of the Netherlands East-Indies
and their English equivalents.*

MEASURES

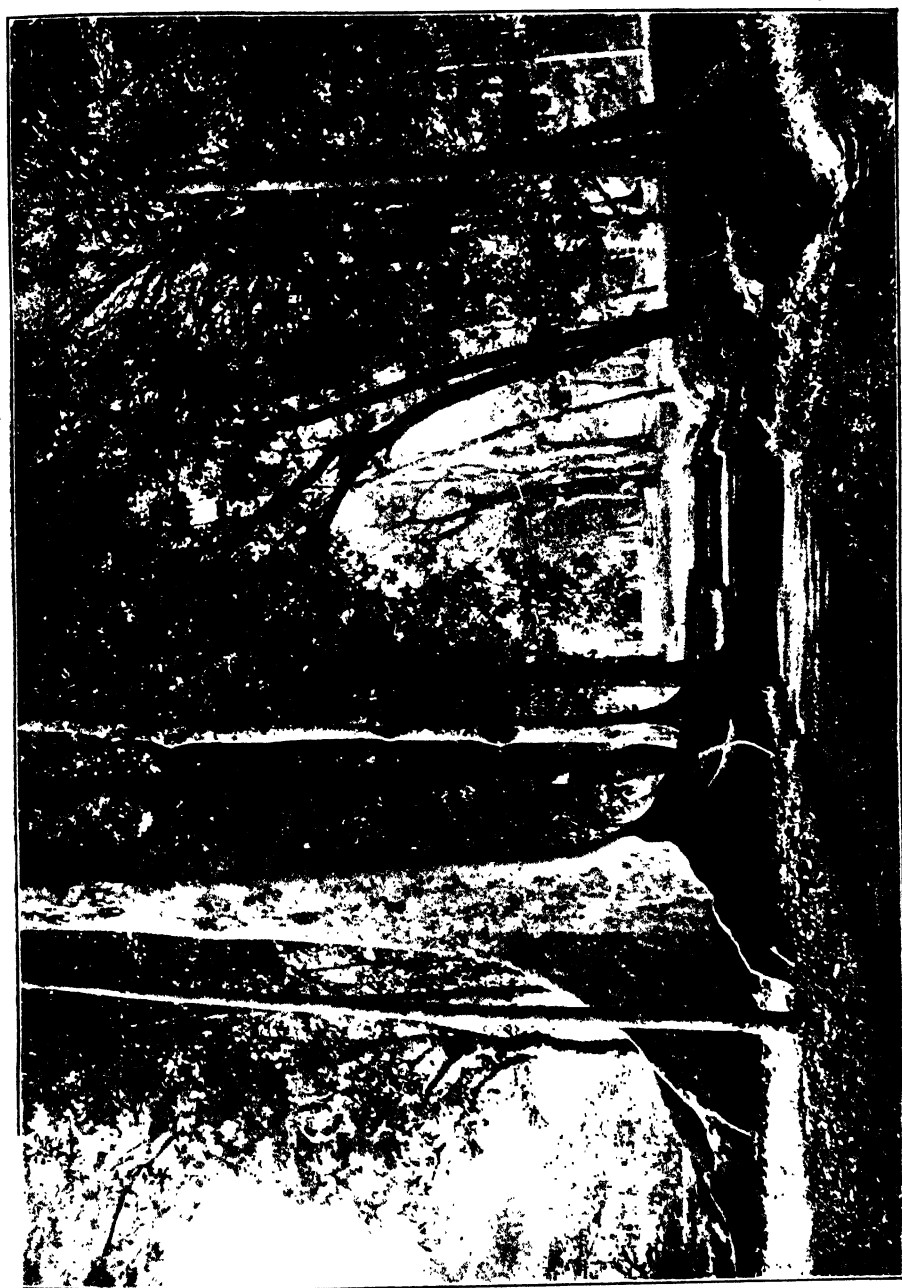
- 1 bahoe or bouw = 7096.49 M² = 1.7537 acre.
1 acre = 4046.71 M² = 0.5702 bahoe

WEIGHTS

- 1 picol = 61.76 K.G. = 136 lbs

COINS

- 1 guilder = 1 s 8 d.



In the Botanical Garden at Baden 2099

GEOGRAPHICAL DESCRIPTION

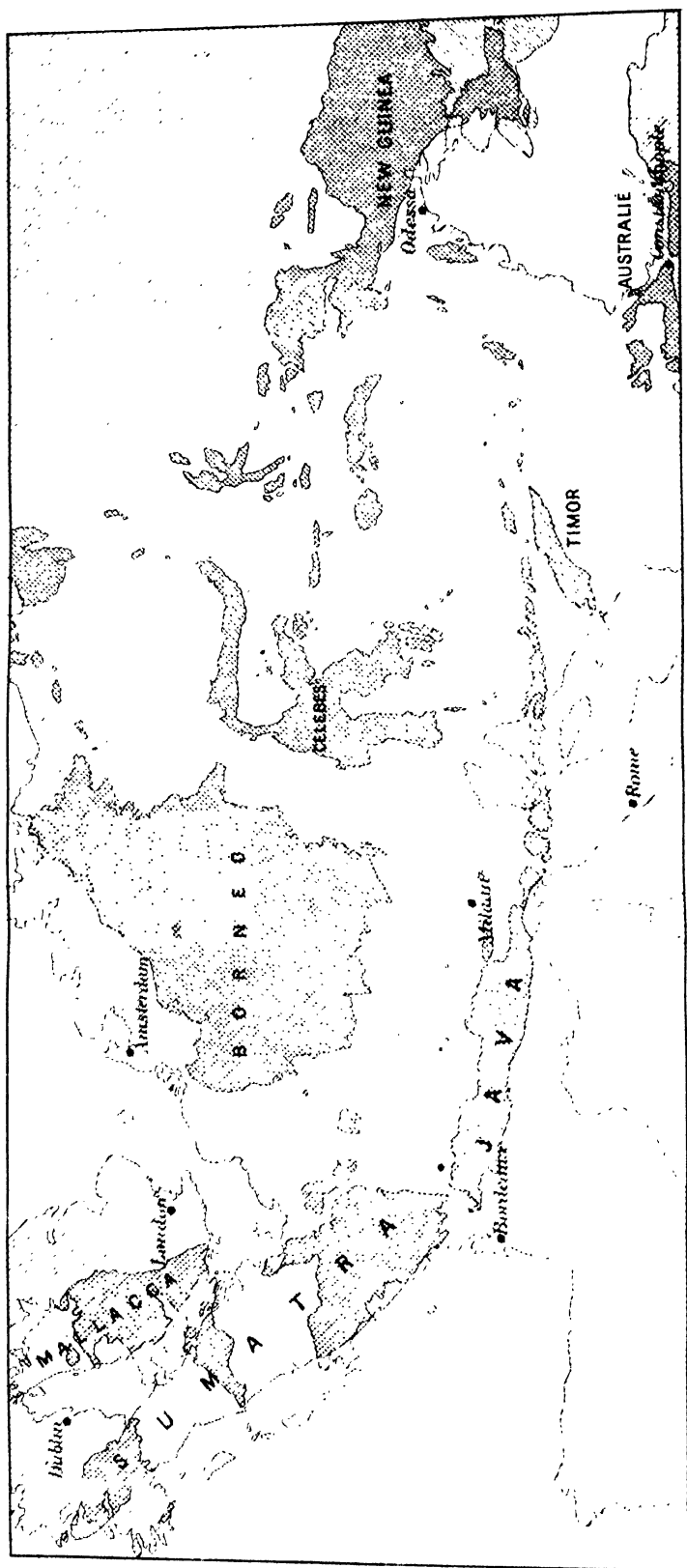
Location, General Topography, Soil

Climate

Flora

Fauna

Population



THE AREA OF THE NETHERLANDS EAST-INDIAN ARCHIPELAGO,
 COMPARED WITH THAT OF EUROPE.



CHAPTER I.

Location, General Topography, Soil.

Netherlands India, the great island empire situated between Australia and South Eastern Asia, extends between 95° and 141° E. L. from Greenwich, and between 6° N. L. and 11° S. L., thus over 5000 K. M. from East to West, and almost 2000 K. M. from North to South. The journey by sea from Sabang, north of Sumatra to Merauke, in New Guinea, covers about 3000 nautical miles, thus more than the distance from England to America.

The largest islands are Java with Madura, Sumatra, Borneo, Celebes, New Guinea; Borneo and New Guinea are only partly Dutch. These countries cover an area:

about as large as:

Java with Madura,	131,508 K.M. ²	the State of New York
Sumatra with adjacent islands, 420,384	„	California
Borneo (the whole island).	736,500	„ Cape Colony
Dutch Borneo,	553,341	„ France
Celebes with adjacent islands, 185,914	„	New Zealand and Ceylon
Dutch New Guinea,	397,204	„ Japan

Besides these are innumerable smaller islands, such as the so-called Little Sunda Islands, the Moluccas, etc., so that the total land area amounts to almost 2,000,000 K.M.², i.e. about as great as half of Europe without Russia.

All these islands have a central mountain region, more or less extensive coastal plains and between these a hill-land, generally not very wide.

The mountain region (over 600 M. elevation) in Java consists entirely of young volcanic rocks, which disintegrate rapidly in the warm, humid climate and thereby provide much plant food. By this means the mountain land is covered with rich soil on which, to an elevation of about

1500 M., are found beautiful plantations, and from here up to the summits, at about 3000 M., are found luxuriant primeval forests. Where the mountain region is deprived of its forests and not in use by the so-called mountain cultures: coffee, tea, Cinchona, or also corn and European vegetables, we find great prairies, intersected with thin, low scrubs.

The hill-land presents a very different appearance, all depending on the composition of the soil. If it must be classified with the abovenamed young volcanic formations, then we find here in Java hardly a single spot that is not in use; what is not occupied by sawahs (irrigated ricefields) is used for dry farming, or is planted with fruit trees and other useful plants. Of the crops may be mentioned, next to tea and coffee, rubber first of all, then cassava, peanuts, tobacco and corn. Where the hill land consists of tertiary marls and limestone, it bears in Java little else than extensive teak forests.

The alluvial lowlands in Java are almost entirely taken up by agriculture, in the first place for the growing of rice, further for sugar cane, corn, tobacco, cassava, batatos, peanuts, cocoanut palms, kapok trees, some indigo, and finally native vegetables and fruit.

In the regions which have been under cultivation for a long time, the fertility of the soil is by no means today as great as it once was, and as it still is in stretches just cleared. Intensive agriculture is no longer possible here without suitable fertilising.

In the plains the fertility is still kept up to the proper standard by a highly developed system of irrigation.

On the other islands — in contrast with the highly cultivated and densely populated Java and Madura —, called the Outlying Possessions, we find generally much less ground under regular cultivation. On a percentage basis, however, commercial crops such as Deli tobacco, rubber and tea, turn the scale, as do cocoanut palms and, on account of less intensive irrigation, the dry ricegrowing. A great many primeval forests and extensive poor grass lands are still found, in the hill-lands as well as in the plains.

Since the central mountain regions of Sumatra, Borneo, Celebes and New Guinea — apart from smaller areas which are built up from the same kind of fertile, young volcanic material as Java's mountain lands — for the most part consist of less fertile, primary rock (granite and old slate) the soil of the Outlying Possessions is in general not so rich as that of Java, being even as poor as similar parts of Middle Africa and South America. Which explains why more primeval forest is found here and a much sparser population.

Between the lowlands and the coastline, especially along the East-side of Sumatra and along almost the entire coast of Borneo, is found a tract of swamps, which attains in some parts a surprising extensiveness, and which is almost entirely covered with mangrove-vegetation.



Palms in the Botanical Gardens at Buiton etc.

Climate

The strongly developed coastline with a number of good natural harbours and suitable roadsteads on quiet, navigable inlets and beaches, create favorable chances for shipping and trade.

Already in times of old this was active between the islands themselves, and between them and the Southern and Eastern countries of the Asiatic continent, with Malacca as the great trade center, just as Singapore, Batavia, Semarang, Soerabaya and Macassar are today.

Moreover, the location of the Netherlands Indian Archipelago between world oceans with a vast deal of navigation may be considered especially favorable for a world traffic. The opening of the Suez Canal has greatly increased the ocean traffic with Europe, while the recent excavation of the isthmus of Panama has again opened up new fields for navigation.

Trade is no more concerned exclusively with the products of agriculture, but also with those of mining.

The primary rockformations in the Outlying Possessions produce tin, gold and silver; the contactzones with younger eruptive rocks produce copper, lead and zinc, while platinum and diamonds are found in Borneo on secondary deposits.

The tertiary shales and sandstone, found on almost all the large islands, contain huge quantities of young coal, lignite and oil.

In Celebes and adjacent smaller islands were recently found great quantities of iron ore containing nickel. Only tin, coal, gold and oil are at present intensively worked.

Climate.

As the difference between the longest and the shortest day is about 48 minutes, the duration of the sun's irradiation in Netherlands India is very uniform and therefore the difference in temperature is not great.

The daily variations in temperature are therefore less here than on the tropical continents. This favorable condition is due to the influence of the sea which tempers the heat by day and the cooling off at night.

On the coast the average temperature is from about 26 to 27 degrees, the absolute maximum temperature from about 54 to 57 degrees and the average maximum temperature from about 50 to 52 degrees C. In Holland during the summer months there is sometimes a temperature of from 54 to 55 degrees C. The absolute and average temperature minima on the coast are from about 16 to 22 and from 21 to 24 degrees. With an increase in altitude the temperature is seen to decrease about 1/2 degree per 100 M.

The atmospheric pressure is also very even. Slight fluctuations are observed daily, but depressions such as are encountered in the temperate

zones are unknown. Occasionally in the regions farthest from the equator cyclonic disturbances occur. Severe continuous winds are practically unknown, but locally over a region of small extent, heavy showers and sudden storms occur now and then, which can be very powerful.

The winds are the regular alternating monsoons and trade winds; the period of change being marked by the inconstancy of the winds and by thunderstorms.

South of the equator it is the West Monsoon usually which brings the rain, while the East Monsoon brings the dry season. Taken as a whole the rainfall is considerable, but is much influenced by the height and direction of the mountain chains.

The period with the least rainfall is from May to August inclusive, and that of the greatest from November to January inclusive.

The tropical oceanic climate, with its regular temperature, calm atmosphere, great moisture and heavy rains, which prevent the formation of steppes and savannas, is most conducive to the growth of tropical plants of agricultural value.

Only on some of the islands in the south-eastern part of the Archipelago do we find a perfectly dry season with the accompanying withering of vegetation.

The excessive rainfall in the highlands is a favourable factor for the irrigation of the high plains.

The Indian climate varies considerably from year to year. The difference between the monsoons is sometimes greater, sometimes less, so that in Java, for instance, in some years there is no real dry season, while in other years not a drop of rain falls for months at a time.

Flora.

By reason of the warm, damp climate, the vegetation is very exuberant almost throughout the entire Archipelago. Where the land is not yet cultivated, from the sea shore to the mountain summits, are found everywhere more or less dense primeval forests.

These forests have an almost similar appearance; strong variations from the general type appear generally only along the coast and on the higher mountain tops. Along the low coasts the *Rhizophora* form a narrow forest strip which presents a most remarkable appearance by reason of the many arched adventitious roots on which the plants rest. As an instance of the peculiar way in which some plants in these regions adapt themselves to their surroundings may be cited particularly those whose fruits develop into young plants on the trees, the seedroots of which sometimes attain a length of several feet before falling off (*Rhizophora*, *Bruguiera*).



Palmetto Regia et the Botanical Gardens at Bunko 1917

Flora

Aegiceras), and the respiratory roots which lift their tops perpendicularly from the swamps (*Sonneratia*, *Avicennia*, *Carapa*). Much of the vegetation indigenous here particularly adapted for dissemination through the fact that their fruits are carried away by the sea (*Cocos*, *Nipah*, *Pandanus*, *Barringtonia*, *Cerbera*, *Terminalia*, etc.).

On the summits of the highest mountains and also in the vicinity of craters, brushwood and shrubs take the place of the timber forests. In these cool regions, although not everywhere at the same altitude, the branches of the trees are covered with thick cushions and long festoons of moss. On the damp, less elevated mountain tops of Ambon and also of other islands the thin trunks are changed into green pillars by an unusually thick coat moss.

Unlike the forests in the temperate zones the tropical virgin forest is for the most part composed of a large number of trees species, many of which attain a height of from 40 to 50 metres, or even more. One result of this is that the latter exhibits much more variety in a small area than the former, but nevertheless on account of its polymorphic composition, even when situated in regions far afield, it gives an impression of sameness, although as far as the species composing it are concerned it has much more variation.

It is a rare thing to find woods where one species predominates. A notable exception is the teak tree (*Tectona grandis* L.) which valuable wood is spoken of elsewhere.

Especially in the dry Monsoon, when the trees are quite leafless and the epiphytes appear like large, thick nests on the branches, but also when they shine with young leaves or when the huge grey flower plumes lift themselves above the great pale green leaves, these forests make a striking impression.

Another species, surely no less remarkable, is the *tjemara* (*Casuarina Montana* Jungk.), forming woods on the mountains of East Java which remind one strongly of pine forests. In Sumatra another species of this tree (*Casuarina Sumatrana* De Vr.) together with a real pine (*Pinus Merkusii* De Vr.) also forms woods.

For Java mention must also be made of the anggring woods (*Parasponia Parviflora* Miq.), which, like the former, have been described by Jungkuhn, and which are found on the Merapi and the Kloet.

In the higher mountains the woods consist mainly of *Vaccinium* species (wood berries) and the Javanese „Edelweiss“ (*Anaphalis Javanica*). There are also various plants which attain their complete development in the temperate zones (violets, buttercups, valerian etc.).

In the Moluccas are found sparse, shadowless, monotonous woods of *Melaleuca* *Leucadendron* L., of which one variety produces the kajoepoetih oil. The soil of these woods is covered with grass.

The picturesque and useful bamboo here and there, as in East Java,

covers whole mountainslopes. Bamboo woods give a uniform shade; the ground is covered with a thick layer of fallen leaves, and is a favorite place for saprophytes.

Palms are also found everywhere, but because of their scattered growth generally contribute little to the average character of the highgrown forests. Particularly remarkable, however, are some woods on account of the gebang (*Corypha Gebanga* Bl.) formed at some distance from the sea, especially along the south coast of West Java. This is one of the biggest species of fanpalm. When the trunk is fullgrown it develops at the top an enormous flowerplume while the palm dies after the ripening of the fruit.

On swampland coasts, especially on many of the smaller islands, grow large numbers of cocoanut palms (*Cocos nucifera* L.), which are also extensively cultivated, and in swampy places on the seashore, especially along the mouths of brackish rivers, the nipah (*Nipah fruticans* Thb.) often grows in a wide area along the banks.

Very conspicuous in the tropics is the surprising wealth of climbing plants (lianes), epiphytes and parasites. These climbers, which belong to the most varied families, are equipped in all kinds of ways in order to cling to other objects and to climb up so that they may seek the light necessary to their growth. There are some which twist themselves around the supporting trunks and partially disappear in them; others by means of aerial roots adhere even to very smooth trunks. Others again make use of variously shaped tendrils to get a firm hold. Some have branches which differ from ordinary branches in that they have the capacity of winding themselves around any smaller object and of then enlarging themselves, whereby an almost inseparable mass is formed. The same is true of hooks which, when they have caught firm hold of a branch, swell so that the latter can be broken off before these climbing organs loosen their hold.

Prickles or thorns often form an excellent means for climbing, most perfected in the rottan (*Calamus*, etc.).

Epiphytes play a most important part in these regions. Representatives of this group are found in several families, but most of them belong to the orchids, ferns and mosses, which often cover great trees from top to bottom. Most species and single specimens are found in the humid mountain regions, while in the highest mountain stretches and on the seacoast their number is limited. However, in this regard no general rule can be established. Thus the shore lands of Java and the surrounding small islands are exceedingly poor in epiphytic orchids, while on the other hand in the Moluccas, for example in Ambon, many are found on the trees along the coast, even on the branches overhanging the sea.

It is a remarkable fact that orchids do not grow equally well on all sorts of trees. Sometimes trees are found growing beside each

other, of which one is entirely covered with them while on the other they are entirely lacking. As rule these plants grow easily on mangga (*Mangifera*), kambodja (*Plumiera*), coffee, etc. but on the other hand they grow hardly at all on djeungdjing (*Albizia*), dadap (*Erythrina*), njamploeng (*Calophyllum*), mindi (*Melia*), ficus, etc. The smoothness of the bark has nothing to do with this, since the smooth trunks of palms are sometimes entirely covered with them.

It is not only herbs which live like epiphytes on trees; shrubs also and even trees are often found living high above the ground. Some species of *Ficus* are especially interesting in this respect. The young plants which have germinated from seeds dropped by birds on the branches, live at first exactly as do the epiphytes. At length the long, downward-creeping, interlacing roots reach the ground, forming at first a network around the trunk of the supporting tree. They continue to increase in number and thickness until the supporting tree is killed and the *Ficus* stands by itself on a trunk consisting entirely of roots.

Parasites from the *Loranthaceæ* family are found everywhere in enormous quantities, among them some with the most brilliantly coloured flowers. More remarkable still are the *Rafflesias*, whose gigantic flowers appear on the lower parts of the stems of some wild grape vines. Even among trees parasites are found, among others, the sandalwood (*Tjendana*).

Where the forests have been cleared and the ground left untouched, a wilderness of high grass (*alang-alang*) and *glagah* usually take their place.

Densely populated districts, such as the lowlands of Java, give the foreign travelers the impression of being forests interspersed with rice-fields. In reality they are what Junghuhn aptly calls „village groves“, villages quite hidden behind the foliage of innumerable fruit trees and others useful growths, which have sprung up by themselves or been planted without any regular order.

One often hears that India is poor in flowers. Certainly in inhabited regions, on meadowland, along roadsides, etc., the number of conspicuous flowers is very small in comparison with Europe, and those found are for the most part imported and gone wild here.

But in the jungles are found flowers in great numbers and the richest variety of form and colour, from the ground to the tops of the highest trees, among them some which are entirely covered with colourful blossoms during the flowering season, even on the edge of the hot mudpools of craters where vapours of sulphurous acid pass over the leaves. But in the dense virgin forest only a few plants have conspicuously coloured flowers.

In Insulinde many coloured fruits and beautifully marked leaves contribute to the decoration of the woods. In such plants Borneo is particularly rich, much more so than Java or the eastern part of the Archipelago.



Fauna.

The Malay Archipelago, situated between Australia and the Asiatic continent, possesses a fauna the type of which belongs to both these regions.

With respect to its fauna, Australia is very sharply divided from all other regions, it has very special forms of the Monotremata (duckbill and anteater) and the marupials, which are found in South America but not in Asia. This region is further characterized by the absence of the higher mamals.

Tropical Asia, the oriental region, on the other hand is rich in placental mamals, but is much less a sharply defined whole than the Australian territory. It has many types in common with Africa, for instance the lemurs, which are also abundant in Madagascar.

To the oriental region now belong also Malacca, which is still linked to the continent, the great Sunda islands, Sumatra, Java and Borneo.

The fauna of New Guinea with the Aroo and Key Islands exhibit a pure Australian character.

The intervening islands, Celebes, the Moluccas and the Timor Archipelago, form a transitional region.

A sharp division between Oriental and Australian territory such as that marked by Wallace, which boundary ran between Celebes and Borneo and between Bali and Lombok, does not exist, because the two regions gradually overlap each other.

Sumatra, Borneo and Java.

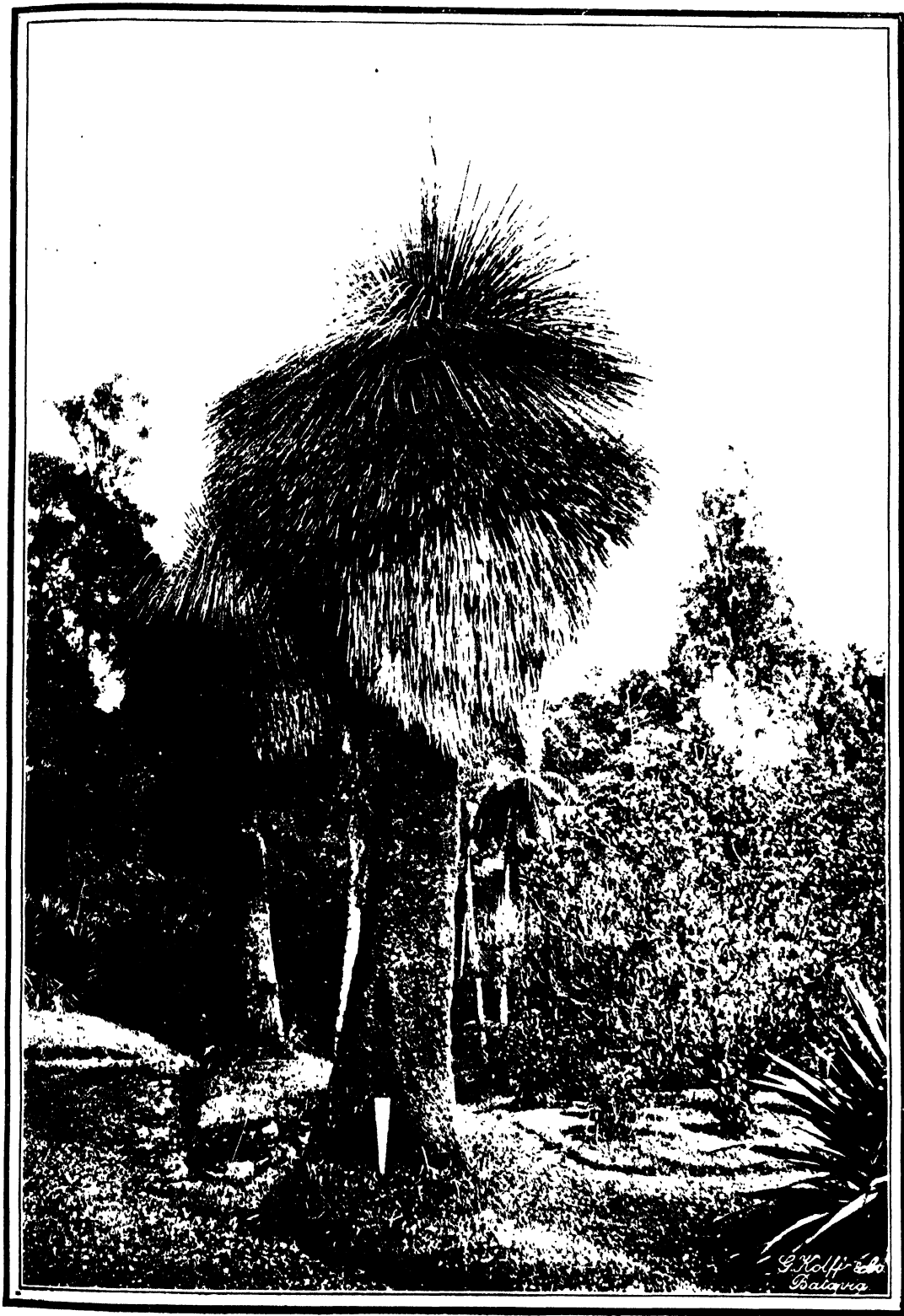
The fauna of these three islands much resembles that of Malacca, but each island has also its own peculiar types. Borneo is more isolated, has been longer separated from both the other islands, while interchange of species after the separation became more difficult than between Java and Sumatra.

On the other hand Borneo has many animals in common with Sumatra, but only with the flat lowlands of the East Coast; the West Coast of Sumatra, with the adjacent islands (Nias, Engano) form, especially as regards the insect world, more one whole with Java.

Thus the orangoetang is common to both Sumatra and Borneo, but is not met with in Java, while on the other hand the tiger is found in Sumatra and Java, but not in Borneo.

The siamang (*Hylobates syndactylus*) is found only in Sumatra, while the longnosed ape (*Nasalis larvatus*) is never found outside of Borneo.

The number of ape species which the continent of Asia shares with the large Sunda Islands is greatest in Sumatra, less in Borneo and still less in Java.



E. Hoffmann
Balneario

Grass-tree in the mountain garden Tjibodas

monkeys (*Tarsius*) are known in Sumatra, Borneo and Celebes, Asia. Common to both Southeast Asia and the great Sunda islands is another semi-ape, the sloth or *Plomplori nycticebus*, while still another pair of remarkable insect-eaters, the toepai (*Tupaja*) and the flying maki (*Galeoptheus*) are peculiar to this region.

The wild buffalo (*banteng* or *Bos sundaicus*) is found also in Indo-China and Malacca but, strange to say, seems to be lacking in Sumatra.

The kerbau is a tamed buffalo (*Bos bubalus*), which belongs to India. Of the deer characteristic of this region, mention need only be made of the kantjil or dwarf deer (*Tragulus*) and the kidang or muntjak (*Cervulus muntjak*).

Among the pachyderms, tropical Asia has the elephant and the tapir in common with Borneo and Sumatra, the first has relations in Africa, the latter only in South America. Both animals are unknown in Java, but here are found the rhinoceros, the onehorned *Rhinoceros Sundaicus*, while Malacca, Borneo and Sumatra have a species of their own (*Rhinoceros Sumatrensis*) with two horns.

Hedgehogs and moles are unknown in this region, but *tjeloceroets* or shrews of the *Crocidura* variety, are common as far as Celebes. As far as the birdlife is concerned, the three great islands are quite similar to South East Asia.

Some peculiar species might be mentioned, such as the argus pheasant (*Argusianus argus*), known in Sumatra and Malacca.

The peacock is found from India and Ceylon to Java, also the original form of the domestic fowl, the bankiva chicken (*Gallus ferrugineus*) makes its home here. Parrots are very scarce in this region, in contrast with the eastern part of the Archipelago, where they are found in abundance.

Celebes, the Moluccas and the Timor Archipelago.

These islands form the transitional region to the Australian territory. Bali still has a great number of birds in common with Java, birds which are already lacking in Lombok, where for the first time we find the cockatoo.

Going out from Java, the number of Javanese birds on the islands of the Timor Archipelago decreases steadily, while the number of Australian species increases. The Australian species, however, are much more changed here than the Javanese, the separation from Australia having taken place much earlier; a deep sea separates Timor from Australia.

In Timor we first meet with a marsupial, the koeskoes (*Phalanger Orientalis*), but not yet with kangaroos.

Timor and Batjan form the eastern boundary of the propagating territory for monkeys, to here is found the monjet (*Macacus cynomolgus*). As far as Timor is also found the cat tribe, represented here by a particular species, *Felis megalotis*, which except here is found only in Rotti.

From the point of view of its fauna, Celebes is the most remarkable island of the Archipelago. It has many species which are entirely peculiar to itself and lacking in the surrounding territory, while allies appear in far distant stretches such as Europe and Africa. It also has few forms in common with Borneo, which tends to ascribe a great age to the Strait of Macassar.

Only in North Celebes and Batjan do we find *Cynopithecus niger*, which is akin to the African baboon. Confined to Celebes, also, is the remarkable Anoa family, the dwarf buffalo and the deerhog (*Babirusa*), which lives also on the nearby Sulu Archipelago and in Buru.

Of the Australian types some species of the koeskoes have penetrated as far as Celebes, while of the Oriental types are still found *Macacus*, *Tarsius*, *Paradoxurus* and *Russa*.

Many varieties of parrots are also found, most of which are indigenous here. The remarkable racquettailed parrot (*Prioniturus*) is also known in the Philippines. In Celebes occurs the *Coracias temmincki*, which species is not further met with in the Oriental region, though common to West Asia, Europe and Africa. *Scissirostrum* is a species which is found here and which is allied to the expecker (*Buphaga*) of tropical Africa.

The doves of Celebes resemble those of Timor, the Philippines and New Guinea. Typical also of this island is the helmeted maleo, *Megacephalon Maleo*, a relative of the *Megapodii*, big, long-legged fowls of New Guinea and Australia.

If the Oriental types are few already in Celebes, they are fewer still in the Moluccas. Monkeys are entirely lacking here, we find only the shrew, also rats, which belong to the same species as those of Australia, New Guinea, Celebes and the Philippines.

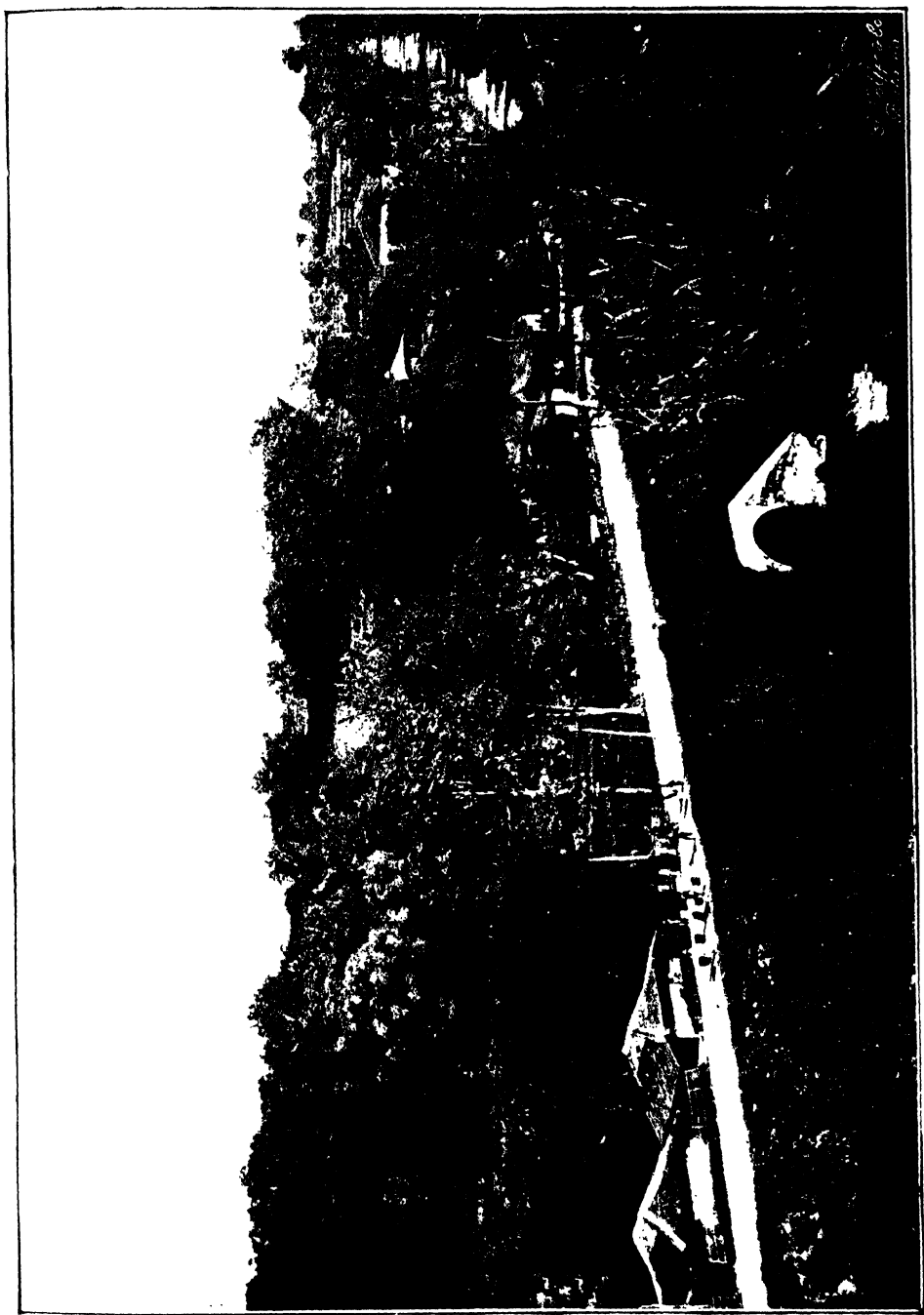
The hog as well as the civit cat have probably been imported.

The number of marsupials is greater here than in Celebes, while the Moluccas are the richest territory for birds that we know of. A third part of the birdlife is represented by parrots, kingfishers and doves, which are related to those of New Guinea but have developed a type of their own. Here are also many *Megapodiides*, while in Ceram we find also the helmeted cassowary (*Casuarus galeatus*), allies of which live in New Guinea.

Many insect groups have reached here their highest stage of development, among the butterflies, for instance, the gorgeous *Ornithoptera*.

New Guinea with the Iroo and Key Islands.

These islands are purely Australian in character. They are remarkable for their great number of marsupials, while genuine kangaroos are also found. Here occur also the Australian anteaters. New Guinea is also preeminently the home of parrots and birds of paradise, while many doves are found, among them the crown pigeon and beautiful kingfishers.



Route over the Pontjak Pass

Nearly all these birds are related to those of Australia, but some Oriental types also occur.

Pheasants, vultures, woodpeckers and junglefowl are entirely lacking, as in Australia.

Among the insects the many horned flies (Ornithoptera) and the shieldbearing locusts are especially remarkable, while many typical Australian species are also found.

That the fauna of New Guinea has so much in common with that of Australia is the more remarkable when one considers how greatly the two islands differ both in climate and vegetation.

Population.

The native population of the Archipelago belongs to the Malay-Polynesian and Papuan races.

The various groups of population differ considerably as to their development, history, political status and purity of race.

Already in the first centuries of our era a part of the Archipelago (chiefly Java and Sumatra) was visited by merchants from Hindustan, who remained for a shorter or longer time in this country.

The groups of people who have intermarried with these Hindus, such as the Javanese and the Malays of Sumatra, are in general the most highly civilized.

In the Archipelago, as elsewhere, a close connection is seen between the regular or irregular pursuit of agriculture and the stage of development attained by the people.

To the established agriculturists belong the Javanese, Sundanese and Madurese in Java, the Balinese in Bali, and the Gajus, Achenees, Bataks, Menangkabaus and Palembangs in Sumatra.

The Dayaks in Borneo, the Toradjas in Central Celebes and the inhabitants of the Moluccas live a semi-nomadic life. They cultivate forest tracts cleared by fire, which are vacated after one or more harvests. Next to rice, sago is their most important food.

To the most primitive groups of people, who live on such animal and vegetable food as nature provides and known as the hunting and fishing tribes, belong the Papuans of New Guinea and some groups in Sumatra and Borneo.

Of the chief races the following deserve mention:

The Malays, in a narrow sense, who are found distributed throughout the whole Archipelago, but who are found especially in Malacca, Sumatra and the surrounding islands. The Malays from the coast regions have developed chiefly into merchants. They are more intelligent and active than

are most of the races of the interior, over whom they have attained an economical supremacy. The Malay tribes of the interior of Sumatra are characterized by their unwillingness to work. The women are the most industrious and do the housework as well as the field labour. In many districts matriarchy prevails.

Resembling these Malays from the coast are the Macassarese and the Bugis, who inhabit the eastern part of the Archipelago, and the Madurese who for the most part live by fishing and navigation.

The Javanese contrast favourably with the other people, both by their orderliness and their willingness to work. Outside of Java they are employed as labourers in Sumatra, the Straits Settlements and the West Indies. They are strongly attached to their surroundings and do not readily leave their homes, which tends to retard their emigration. But now that considerable colonies of Javanese (see chapter XIV) are found outside of Java, they are more ready to go away to a new environment. Labour for the European agricultural estates is chiefly supplied by the Javanese. In the Outlying Possessions, however, may also be found many Chinese.

According to the census of 1905 it appeared that 71 $\frac{0}{10}$ of the inhabitants of Java who pursue an occupation belong to the farming class. The number of tradesmen and artisans was only about 5 $\frac{0}{10}$ and 4 $\frac{0}{10}$ respectively.

Foreigners in the Dutch East-Indies.

For centuries many foreigners have settled in the Archipelago, besides Europeans principally Chinese and Arabs. Their number is also great at the present time.

The Chinese are found chiefly in Java, on the East Coast of Sumatra, in Borneo and in Banka. They are principally merchants, while many are tradesmen and gardeners. Most of them are middle men and carry on a retail trade, but many by their diligence and economy have grown rich and become proprietors of large commercial enterprises, estates and factories.

The European trade is in the main wholesale, being supplemented by the intermediate trade of the Chinese.

In the western Division of Borneo the Chinese have accomplished a great deal towards the advancement of agriculture.

On Sumatra's East Coast contract coolies are imported from China for labour in the tobacco fields and on rubber-estates. A considerable number of the Chinese living in these parts work now as free labourers, small farmers and merchants. Thousands also find a means of livelihood in fishing and wood-cutting.

Chinese labourers are also found in great numbers in the tin-mines of Banka and Billiton and in the coal and gold-mines of Sumatra.

The number of Arabs has increased since the opening of the Suez Canal. For the most part they are retail dealers, while part of them

are coast navigators. The fact that they come from the country sacred to the Mohammedans gives them a certain prestige among the natives.

At the end of December, 1917, there were about 139,000 Europeans in the Netherlands Indies. They are for the most part officials, merchants, managers and employees. It is due to their activity, capital, knowledge, energy and capacity for organisation that the Dutch East Indies have become a producing country of importance.

According to administrative data furnished by Government officials the number of inhabitants at the end of December, 1917, was,

in Java and Madura	34,157,383
in the Outlying Possessions	15,046,256

Total	47,205,639

In the following table is a review showing the numbers of Europeans, Foreign Orientals and Natives and their distribution over the various provinces, besides a comparison of the size of the population according to the administrative data of 1917 with that of the last census (1905) and the number of inhabitants per square K. M. in each province.

PROVINCE	Number of Inhabitants end of Dec. 1917				Increase or decrease percentage since 1905				Number of inhabitants per square K.M.		
	Europeans	Foreign Orientals	Natives	Total	Europeans	Foreign Orientals	Natives	Total			
JAVA AND MADURA											
Bantam	502	4,064	875,445	878,009	—	+ 22.6	—	2.0	—	1.9	111
Batavia	29,228	107,596	2,507,818	2,444,642	+ 111.7	..	+ 12.6	+ 15.4	..	+ 15.9	210
Preang Regencies	10,840	20,107	5,527,075	5,558,022	..	96.0	..	15.8	..	14.1	164
Cheribon	1,794	28,517	1,640,800	1,671,111	1)	1)	1)	1)	1)	1)	246
Pekalongan	5,545	25,522	2,257,540	2,264,007	..	74.7	..	25.5	..	15.8	408
Semarang	12,765	40,556	2,759,056	2,792,555	..	44.5	..	17.2	..	6.5	341
Rembang	1,980	20,599	1,618,125	1,640,702	..	75.2	..	11.5	..	9.5	220
Sourabaya	20,998	59,700	2,469,146	2,529,844	..	98.1	..	29.1	..	5.1	425
Paseroean	5,779	19,290	2,029,276	2,054,545	..	6.9	..	26.8	..	1.4	235
Besoeki	2,737	9,185	1,204,056	1,215,976	..	53.0	..	81.8	..	24.7	120
Banjoemas	2,158	9,282	1,616,270	1,627,690	..	97.6	..	53.8	..	9.3	293
Kedoe	5,555	17,045	2,695,159	2,715,517	..	45.8	..	27.1	..	15.9	497
Diokja	4,198	11,572	1,558,598	1,574,168	..	79.2	..	104.9	..	22.5	442
Solo	5,919	15,997	2,042,954	2,060,870	..	17.5	..	19.4	..	29.5	533
Madioen	5,175	6,495	1,592,574	1,602,242	..	75.4	..	34.0	..	18.6	272
Kediri	5,896	15,447	2,152,517	2,151,660	..	30.1	..	19.1	..	21.5	309
Madura	805	7,175	1,770,265	1,778,245	..	21.2	..	50.2	..	18.8	329
Total	111,450	595,725	55,652,250	54,157,585	+ 71.5	+ 24.1	+ 15.2	+ 13.5			259

1) Figures 1905 not known, because Cheribon has since gotten other boundaries.

PROVINCE	Number of Inhabitants end of Dec. 1917				Increase or decrease percentage since 1905			Number of inhabitants per square K.M.	
	Europeans	Foreign Orientals	Natives	Total	Europeans	Foreign Orientals	Natives		Total
OUTLYING POSSESSIONS									
Sumatra's West-Coast	5,552	11,922	1,275,170	1,288,624	+ 20.8	+ 19.6	- 1.7	- 1.5	27.
Tapanoeli	725	2,671	761,844	765,258	.. 65.8	.. 58.7	.. 85.4	+ 85.2	20.
Benkoelen	484	5,299	226,062	229,845	.. 55.2	.. 57.7	.. 12.2	.. 12.5	8.85
Lampong distr.	458	2,858	168,256	171,572	.. 215.7	.. 121.2	.. 8.5	.. 9.6	7.5
Palembang "	1,400	12,675	746,475	760,548					8.8
Djambi "	190	5,959	205,116	207,265					4.5
East-Coast of Sumatra	6,270	145,655	742,215	894,140	.. 155.1	.. 26.9	.. 64.4	.. 57.5	9.56
Atjeh and Dependencies	1,754	12,982	695,125	709,841	.. 127.9	.. 50.6	.. 21.6	.. 21.9	12.8
Riouw and Dependencies	419	21,628	177,602	199,649	.. 89.6	.. 15.8	.. 90.5	.. 77.9	6.46
Banka and Dep. Billiton	541	71,714	81,925	154,178	.. 70.7	.. 62.9	.. 15.6	.. 55.8	15.
West-Coast of Borneo	568	20,762	58,551	59,481	.. 51.0	- 8.5	- 2.9	- 4.8	12.5
Carry forward	16,604	777,141	5,620,275	6,014,018	.. 29.7	+ 55.4	+ 26.4	+ 27.2	5.9

1) Palembang and Daendel were not yet separate provinces in 1905.

PROVINCE	Number of Inhabitants end of Dec. 1917				Increase or decrease percentage since 1905			Number of inhabitants per square K.M.
	Europeans	Foreign Orientals	Natives	Total	Europeans	Foreign Orientals	Natives Total	
Brought forward	16,604	577,141	5,620,275	6,014,018				
OUTLYING POSSESSIONS								
S. and E. Coasts of Borneo . . .	1,965	16,616	920,887	940,866	+ 94.7	+ 80.9	+ 19.4	+ 20.2
Menado	1,787	10,726	729,513	742,026	„ 41.4	„ 51.5	„ 70.4	„ 70.0
Celebes and Dep.	2,456	17,567	2,552,245	2,552,048	„ 55.0	„ 181.7	„ 472.0	„ 466.1
Amboina 2), . . .	5,181 1)	2,999 1)	554,754 1)	560,954				24.—
Ternate and Dependencies 3), . . .	477 1)	1,195 1)	198,465 1)	200,155				
Timor and Dep.	655	4,821	1,085,875	1,091,549	„ 162.2	„ 156.2	„ 254.3	„ 253.6
Bali and Lombok	514	8,081	1,556,485	1,544,880	„ 165.9	„ 204.5	„ 156.6	„ 156.9
Total Outlying Possessions	27,451	458,944	12,579,897	13,046,256	+ 69.9	+ 57.6	+ 72.1	+ 70.4
								9.5

1) Number inhabitants end of 1912.

2) Including Southern and Western New Guinea.

3) Including Northern New Guinea.

Number inhabitants in some of the large cities of Netherlands India.

CITY	Europeans	Foreign Orientals	Natives	Total	Time
Batavia	20.766	30.557	180.141	231.464	ult. Dec. 1917
Sourabaya	± 20.000	24.984	115.817	160.801	" " 1918
Semarang	8.875	20.066	77.911	106.852	" " "
Bandoeng	8.245	6.951	43.453	58.649	" " "
Soerakarta	2.000	167.882		159.882	" " "
Djokjakarta	3.396	4.926	88.736	97.058	" " "



LEGISLATION, ADMINISTRATION AND LEGAL SYSTEM

Government

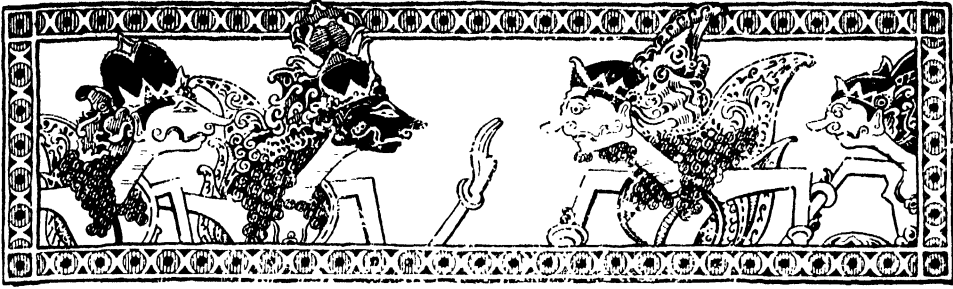
Selfgoverning Communities

Provincial and local self-government

The legal system



Croft of the Tinklesham Pines



CHAPTER II

Government.

1. Political relation of the Colony to the Mother Country.

The Netherlands Indies form politically a part of the Kingdom of the Netherlands.

The Dutch legislature may regulate all matters concerning the Colonies if according to its opinion the necessity should arise; besides, it is expressly charged with the regulation of various affairs.

Regulations of a legislative nature may be made through the Crown by Royal Decree and the Governor General by ordinance as well as by the Dutch legislature.

The supreme control over the Colonies is vested in the Crown.

The Governor General rules over the Netherlands Indies in the name of the King (Queen).

His legislative as well as his executive functions are performed with the aid of an official advisory body, the Council of the Dutch East Indies.

In his executive functions the Governor General is assisted by the Heads of the nine Departments of General Administration, who together form a Council of Department Heads.

By act of December 16, 1916, a representative body (the People's Council — Volksraad) was established. The first assembly was opened May 18, 1918.

The assemblies are as a rule public.

The People's Council consists of at least 59 members. The chairman is appointed by the King. Of the other members 19 (5 Natives, 14 Europeans and Foreign Orientals) are appointed by the Governor General after consultation with the Council of the Netherlands Indies, and the other members (10 Natives, 9 Europeans and Foreign Orientals) are elected by the members of the Local Councils.

The Governor General consults the People's Council on all subjects

regarding which he wishes to hear their opinion. He is obliged to consult this body with regard to:

1. the budget and some provisions in connection with it,
2. the contracting of loans for the benefit of the Dutch East Indies and their guaranteeing by the D. E. I. Government, at least when one or the other is transacted by virtue of decree from the Governor General. (A loan may also be contracted by law, in which case consulting with the People's Council is not imperative.)
3. the projecting of general ordinances which impose personal military duties on the inhabitants.
4. such other projects as are indicated by the King in a general ordinance.

A preliminary budget is drawn by the Governor General in accordance with the ideas of the People's Council. The Dutch Legislature is charged with the definite fixing. It can deviate from the preliminary regulation.

The People's Council can represent without any restrictions the interests of the Dutch East Indies and its inhabitants before the Dutch and the Indian Governments and also before Parliament.

Questions directed in writing by the members to the Government are also answered by letter.

2. System of administration and training of civil servants.

For administration in a narrower sense, the Dutch East Indies are now divided into 57 provinces, viz. 5 Governments, 55 Residencies and 1 Independent sub-residency.

The highest functionary in the provinces is a head official with the title of Governor or Resident, who represents the Central Government. His task is not the same in all provinces. The system of administration in Java and Madura present, except in the Principalities (Surakarta and Djokjakarta), a different aspect from those in the Outlying Possessions, where besides the central authority we find also a Native ruler.

In the regions under direct control of the Government the Residents act as direct rulers, but in the selfgoverning communities their task is limited to supervision and the giving of advice and assistance.

Where they act as rulers in the Outlying Possessions, their independence as a rule is greater than in Java, because of the more isolated location and the more primitive conditions.

Since the decentralization of administration was introduced in 1905, the duties of the Residents in Java and Madura have been transferred partly to provincial and municipal councils, which are established for the advancement of local interests.

The legislative power formerly vested in the Residents, viz. the making of regulations and police regulations, belongs now to the activities

of these local councils, whose task further includes all matters of local importance, the care of which has been bestowed on them by ordinance.

Although the power of the Residents is therefore not as great as it was before the introduction of decentralization, nevertheless it is still very extensive. It includes, among other things, the maintenance of public order and safety, the care for the public health and campaigns against infectious diseases, the promoting of economic interests such as agriculture, cattle raising, irrigation, development of land, commerce and industry, supervision of instruction, religion, etc.

The provinces are subdivided into divisions at the head of which are assistant-residents, while the divisions again are subdivided into smaller districts.

The European civil servants are trained at the State University of Leiden, which training consists of a three years' course.

For more advanced training of civil servants the Netherlands Indies Civil Service Academy was established at the Hague in 1907. To officials who have served for some years and who are considered qualified for the higher ranks, an opportunity is given at this institution to pursue a two years' course in the various systems of colonial government, parts of the Netherlands Indian civil and criminal law, political economy and statistics and an advanced course in the modern languages.

Besides the civil servants, who have been trained at Leiden, there is another class of officials who exercise governmental authority in the Outlying Possessions. These are called Civil Administrators (*Gezaghebbers*) and are partly military men (officers) who also have political authority, partly officials from the civilian class. Since 1914, candidates for this office have been trained in an institution for the study of administration, founded at Batavia and called the Civil Service College.

Candidates for admission must fulfill certain examination requirements. They are appointed partly in Holland, partly in the Indies for a two years' course in this institution, during which time they receive an allowance. The curriculum is almost the same as that in the administrative training school in Holland, but in addition to the subjects taught there and for the sake of practical training, instruction is given in the elementary construction of houses, bridges and irrigation works, road making, sanitation, first aid and medical treatment.

Besides European civil servants we find Native officials throughout the Colony. Since the founding of the Dutch East Indian administration the principle has always been to have the people under the rule of their own chiefs. The highest post which a Native can occupy, that of Regent, is hereditary, a son or some other relative of the deceased or ex-Regent succeeding, in case he fulfills the stipulated requirements as to ability and efficiency.

In his domain, a Regency, which generally corresponds with a Division, the Regent is the head of the Native population and adviser to the European official in charge of the Division. The Regencies are further subdivided into districts with minor Native officials in charge.

The steady development of the people necessitates a constant raising of the standard of competence and ability in the Native officials. In connection herewith they can also be given a more independent part in the task of administration. This assignment of more independent official duties to Native civil servants has already been begun in the so-called „Emancipation of Native Government” of which further details are given below.

The training of these Native officials is in accordance with the higher requirements demanded of them. It is received in the training-schools for Native officials while in the Civil Service College in Batavia active Native civil servants who are considered qualified for higher positions are given an opportunity to continue their studies, while retaining their salary.

In a two years' course they are given instruction in the Dutch and English languages, in the principles of Dutch East Indian law, also in political economy, especially in its bearing on Colonial matters. Agriculture and the care of cattle, construction of simple buildings and waterworks the making of roads, surveying, hygiene, first aid and medical treatment belong also to the curriculum.

In the Outlying Possessions are found Native officials under a number of designations, but who lack the authority and the influence of the Regents in Java. The direct relation of the European official with the population is as a rule greater in these places.

In the administrative system the village communities occupy a special position, because in a certain measure they enjoy autonomy, which expresses itself in the management of their domestic affairs and in the election of their village headmen, though under the supervision of European authority.

The village headmen's duties consist in executing the regulations and orders of the superior authority and thus facilitating intercourse between the European administration and the Native population. The headmen receive no fixed salary, but get a share of the taxes collected by them and the revenue of certain lands owned by the Government. They can also claim the services of the inhabitants of their village.

5. Emancipation of Native Government in Java and Madura.

In order to free the Native administration in Java and Madura as much as possible in view of its stage of development, from the leading strings of the European administration, and so that eventually it may assume a considerable part of the official duties of the European civil servants and in the main accomplish that task independently, an ordinance



Rever-Renelo, a mountain lake.

was passed in 1918 whereby in certain divisions and regencies, indicated by the Governor General, various activities and duties formerly assigned by him through ordinance or power of ordinance to European or higher Native officials are now tentatively given over to the Regent or to minor Native officials by decree from the head of the provincial Government.

An initial trial of this emancipation was made in the division of Tjandjoer in the Preanger Regencies. The favourable results obtained in this instance have made the Government decide to extend the system to various other divisions and regencies in Java and Madura. It is planned primarily to introduce the system of emancipation into at least one division or regency of every province, while in the other regions of administration it will subsequently be introduced gradually.

4. The Administration over Chinamen and Arabs.

With regard to the Chinese and Arabian population also, the Government has at its disposal certain advisers of these nationalities who also act as intermediaries in affairs concerning their own people. These are known as Chinese Majors, Captains and Lieutenants and Arab Captains and Lieutenants and are appointed and promoted by the Governor General.

Self-governing communities.

Netherlands India is politically divided into directly ruled territory and into territory where the „Native princes and peoples” enjoy autonomy.

In the selfgoverned territory the Native authority remains established under Dutch sovereignty. The relationship between the Netherlands Indian Government and the selfgoverning communities rests mainly on historical foundations and is regulated by political treaties or corresponding declarations.

It is endeavoured to maintain the selfgoverning communities as much as possible and to develop them; incorporation with the territory under direct rule takes place only on request or whenever such a proceeding seems inevitable to the welfare of the people.

The treaties formerly were concerned mainly with the obligation of the selfrulers to prevent piracy, strandthieving and slavery, and not to enter into relation with foreign princes. As long as the conditions of the treaty were not violated, the government did not interfere with the internal affairs of the communities. The treaties have been considerably altered in the course of time in order to obtain the desired guarantees for a fair development of country and people.

Since the beginning of the present century it has been the aim to cement the relation with most of the selfgoverning communities in treaties of simpler form. The existing detailed agreements were sometimes out of place in insignificant provinces and sometimes proved an impediment to

a more vigorous interference by the Dutch Government. They were accordingly replaced by a political contract called „Short Declaration”, in which the selfruler promises, among other things, to obey all regulations and orders issued by the Government with regard to the community. A briefer account of the mutual rights, qualifications and obligations which are described elsewhere in the treaties, is set forth in a legal regulation, the Ordinance concerning Autonomies, which received its sanction in 1914, but has not yet come into force. It is going to be replaced by a new ordinance, revised and up to date.

Where possible, small, insignificant autonomous provinces are united to larger ones with more capital behind them.

In 1919 the number of autonomies with a „Short Declaration” outside of Java, amounted to about 280, while there were 19 detailed treaties; in Java there are 4 principalities in Soerakarta and Djokjakarta.

The Netherlands Indian Government supervises the autonomic province by means of its civil servants, who endeavour to aid the rulers in the righteous execution of their tasks and the Native administration of justice.

As one of the means of improvement may be noted the supervision of the training and education of future rulers.

A regulation, which dates from 1902, and which has contributed largely to the welfare of the provinces, is the establishing of public treasuries (*Landschapskassen*), where necessary, combined with a sub-treasury, whereby a separation is effected between the finances of the rulers in selfgoverning communities and those of the autonomous provinces. Formerly the ruler received the entire revenue, very much to the detriment of the community's interest; now the monies derived from taxes, concessions, public industries, fines, etc., go into the public treasury.

The rulers receive a fixed salary and a moderate share of the returns from concessions and such, while from the public treasury are paid the expenditures for administration, teaching, medical help, construction of roads, bridges, waterworks, etc. Expenses contracted by the Government in the direct interest of the community are paid back, wherever possible. Every year a budget is made up, which is subject to the approval of the Resident.

General regulations are made concerning the management, control and supervision of these treasuries.

In most provinces the taxes paid in natural products have been abolished and taxes on industries and other revenues have taken their place, which form one of the principal revenues.

Various public works are being undertaken on a large scale, which in a number of states are contracted for and carried out by some firm.

Figures underneath give a review of the receipts and expenditures of the treasuries in a few successive years, while the expenditures for some of the sub-departments of the administration are taken up separately.

	Total Revenues	Expenses for					Public Enterprises	Restitution to the D. E. I. Government
		Total Expenses	Education and medical Service	Agriculture, Industry and Commerce	Public Works			
1912	f 12,766,454	f 7,951,429	f 249,271	f 66,920	f 1,406,997	f	f 70,576	f 1,501,898
1915	.. 15,952,505	.. 8,582,048	.. 511,518	.. 115,518	.. 1,745,010	..	.. 79,164	.. 1,598,884
1914	.. 15,068,127	.. 10,028,275	.. 292,766	.. 92,125	.. 2,152,099	..	.. 120,708	.. 2,271,987
1915	.. 15,608,684	.. 10,669,840	.. 559,595	.. 99,249	.. 2,606,076	..	.. 90,278	.. 2,282,588
1916	.. 17,659,899	.. 15,295,165	.. 425,415	.. 174,290	.. 5,298,915	..	.. 118,742	.. 2,590,221
1917	.. 18,145,507	.. 14,748,428	.. 472,829	.. 451,291	.. 5,969,671	..	.. 150,172	.. 2,556,421

Provincial and local self-government.

In the provinces under direct rule, wherever circumstances permit, by the establishment of representative bodies, opportunity is given the residents to take active part in the governing of provinces, districts and towns. The establishing of these magistracies dates from 1903 and went regularly into effect. The program of these political organisations is for the most part carried out, though not yet completely. The foremost principle is that the local magistracies shall fit in as closely as possible with the interests formed by the natural situation of the country, the administrative division existing from former times and society. 13652

The local magistracies have a task and a working-sphere determined by law. Within this sphere they are autonomic. Interference in their ruling is only permitted in cases determined by the law and through authorities named by law. Except for this limitation they are authorized to make for the carrying out of their task general binding rules for the violation of which penalties may be imposed. They are authorized to impose taxes and to ask contributions for services done by the magistracy for the welfare of the inhabitants. They may contract loans, under condition of sanction by the state legislator. It is strictly seen to that the interest and repayment of these loans is guaranteed, either by the revenues from the proposed works or by the balance from the imposed taxes.

To the local organisation, furthermore, is given as great a share as possible in that part of magistracy's task which has to do with the local maintenance, but which was formerly taken care of by the central magistracy.

All public works, such as roads, with the appertaining works and plantings, plantations, gardens, markets and market buildings, slaughter houses, cemeteries, as well as irrigation and drainage works, are under the management of the local organisations.

The working sphere of the local councils is almost unlimited, with this understanding, however, that they can not fix regulations which are in conflict with those imposed by a higher authority, nor limit the authority of lower organisations.

These local councils are so composed that they contain representatives from all nationalities, of which the people in the jurisdiction consist. In the town communities, which usually have an Indo-European character, the majority of the seats are given to the European element. In the more extensive rural districts, however, a majority in the council is pledged to the Native population.

In the councils which are established for residencies (provincial councils) and which often include more than one municipal or district resort, the majority still consists of civil servants and Europeans.

The assignment of members to these lastnamed (provincial) councils consequently took place by appointment. Members of municipal and district councils, however, are nearly always elected by the citizens of the resort who are entitled to vote, or in accordance with existing popular custom. The right of election to these councils is being gradually extended in a liberal sense.

On the basis indicated here, councils are established for all of Java, wherein the division of the existing residencies is followed. Furthermore, municipal councils are established in nineteen of the larger towns. Fifteen district councils will follow in the course of the coming year.

In the provinces outside of Java, also, political organisation has been forcefully taken in hand during the last few years.

Ten of the larger towns in the Outlying Possessions have municipal councils; various district resorts have been formed. Among others the so-called Agricultural District on the East Coast of Sumatra was appointed as a separate resort.

Provincial councils are not yet established outside Java and Madura.

The legal system.

The division of the population of the Netherlands Indies into Europeans, Natives and Foreign Orientals has also its influence on the legal system.

The statutes which regulate the administration of the Dutch East-Indies (Regeeringsreglement) demands where Europeans are concerned, that their rights must be similar with those of Holland, in so far as particular conditions in India or the desirability of enforcing a rule at the same time for another group of the population, do not necessitate a variation.

The civil, mercantile and criminal codes for Europeans are almost the same as those in the Netherlands.

For Natives and Foreign Orientals the same criminal code is in effect as for Europeans; the civil code of these two groups of population is based on the principle, that as far as their social standing permits, they are subjected to the same laws as the Europeans, while moreover their „adat” (— native law) is respected as much as possible.

The practice of this principle has made the Chinese in the biggest part of India subject to a law almost similar to that of the Europeans in its regulation of civil and mercantile codes, which regulation will soon be extended over all India.

The other Foreign Orientals are subjected in most provinces to the European property law, but their family laws are still ruled by their „adat”. This regulation, also will soon be enforced throughout all India.

For the Natives, as far as the civil law is concerned, their *adat* is practically unchanged.

Natives and Foreign Orientals also have the opportunity of making themselves subject to the civil and mercantile law for Europeans.

It is the aim of the legislator to do away with the difference in law, wherever possible. In order to obtain as much uniformity as possible a general civil code is in preparation which, as far as property rights are concerned, gives an almost uniform regulation, and which with regard to family law and relative matters, has only such differences as can not be avoided on account of divers creeds and social opinions.

In a similar spirit the Commercial law will be revised; the penal code, as mentioned above, is already unified.

The above is in force, in so far as the Native population is concerned, not completely, in selfgoverned regions and in directly governed regions, where the people are left in the enjoyment of their own legal administration. The Native law in these regions, however, is strongly influenced by the Government officials who, especially with respect to the penal code, have known how to strengthen our regulations.

The administration of justice.

With regard to the administration of justice in these colonies, we observe principally three rubrics:

- a. administration of justice for Europeans and those enjoying similar rights,
- b. Government administration of justice for Natives and Foreign Orientals in regions under direct rule,
- c. Native administration of justice in selfgoverned districts and in some parts of the directly governed regions where the people, either for political or for practical reasons, are left in enjoyment of their own administration of justice.

Only the administration of justice mentioned under *a* and *b*, is administered in the name of the Queen.

Europeans and those who enjoy the same rights are usually tried before European magistrates, throughout the whole of Netherlands India except in several parts for minor offences. The magistrates who try Europeans handle also civil and commercial suits brought against Natives and Foreign Orientals, in case these suits come under the jurisdiction of European law. In the directly governed regions Government administration of justice for Natives is the rule.

In Native administration of justice the activity of the Indian Government is limited to seeing that cruel and barbaric punishments, which are forbidden, are not administered.

The Native courts are usually presided over by an European Government official, whose activity has no further scope than the giving of suggestions



The Native administration of the law in selfgoverning communities is confined to the private subjects of the selfruler.

Government subjects come under Government jurisdiction.

Government magistrates also act in these regions when offences against direct subjects or properties of the Government are tried, as well as in transgressions with respect to taxes, import- and export duties and to ordinances of which such is fixed.

The judicature of the selfgoverned communities is often very limited.

As an example of Native dispensing of justice may be cited the so-called religious jurisdiction in Java and Madura, which is dispensed by councils of priests, so far as marriage and heritage laws are concerned, which come more under the influence of the commandments of Islam than does any other department of the law.

Courts. Europeans are brought to trial before one of the Courts of Justice, of which there are 3 in Java, 2 in Sumatra and 1 in Celebes. Higher appeal may be made at the High Court of Justice of Netherlands India, which is also a Court of Cassation and which resides in Batavia.

Minor civil cases are handled by the Residential Court, which is held by the local president of the „Landraad”.

The Court for the Native population and Foreign Orientals is the „Landraad” or a board of equal rank, in Java and Madura presided over by a judicial official. In the Outlying Possessions are still many Native Courts under the praesidium of civil officials. For some years past it has been decided that Native chiefs, also, may hold this position. The members are Native chiefs, some of whom take seat by virtue of their office, some of whom are appointed by the Governor General.

To each „Landraad” is attached an advisor of the same nationality or religion as the accused, who gives information regarding the „Adat”. From the „Landraad” higher appeal may be made to the Courts of Justice.

Minor offences are judged for all groups of the population in Java and Madura by the „Landgerecht”. The judge of this court is a lawyer or an official especially appointed. In the Outlying Possessions the Magistracy Court (magistraatgerecht) has this authority over Natives and Foreign Orientals; it deals also minor civil cases.

From the judgement of this court no appeals can be made. Officials are obliged to register all penalties applied, while the High Court of Justice of Netherlands India may look into the registers at any time.

It is planned, also, to extend the „Landgerechten” in the Outlying Possessions. As a first step in this direction it is expected that one of these courts will soon be established in Macassar and several more on the East Coast of Sumatra. Cases of transgression which in Java and

Madura come under the jurisdiction of the „Landgerecht” are in the Outlying Possessions administered by the Residential Court, when the accused is a European.

In Java and Madura minor civil cases and Native legal offences are administered by the Regency- or District Court, consisting of the Regent or the Chief of the District, each for the region under his authority.

From decisions of the District Court in civil affairs a higher appeal may be made to the Regency Court.

From decisions of the Regency Court a higher appeal may be made to the „Landraad”.

It is the intention to unify the law of proceeding as well as the material law. As far as the „Landgerecht” procedure is concerned this unification is already attained, all minor penal cases are handled alike before this court. A plan for the unification of the entire remaining penal process is ready but not yet established. The unification of the civil process is still being worked on.

The procedure of the law for Europeans is here much the same as in Holland, while for the Natives it is simpler and less expensive.

The High Court of Netherlands India exercises supervision over the entire legal administration of the Colonies.



FINANCE

Public finances

Taxes



CHAPTER III.

Public finances.

The basis of the financial management of the Dutch East Indies is the budget of expenditure and revenue, which comes under two headings for the regulation of expenditure (in Holland and in India) and two for showing the means by which the expenditure is covered. The Governor General submits the proposed finance-bill to the People's Council (Volksraad) for discussion and makes up a preliminary budget in accordance with the ideas of that Body; the Dutch Government puts this bill revised or unrevised before the legislative assemblies (Staten-Generaal) for final sanction of the finance-bill of the Dutch East Indies.

The administration and auditing of the finances of the Netherlands Indies are regulated by the Indian Law of Accountability (Comptabiliteitswet). According to this law the Dutch East Indies are a legal body, which is represented either by the Governor General or by the Minister of Colonies. The properties, profits and charges of the Dutch East Indies are separate from those of Holland.

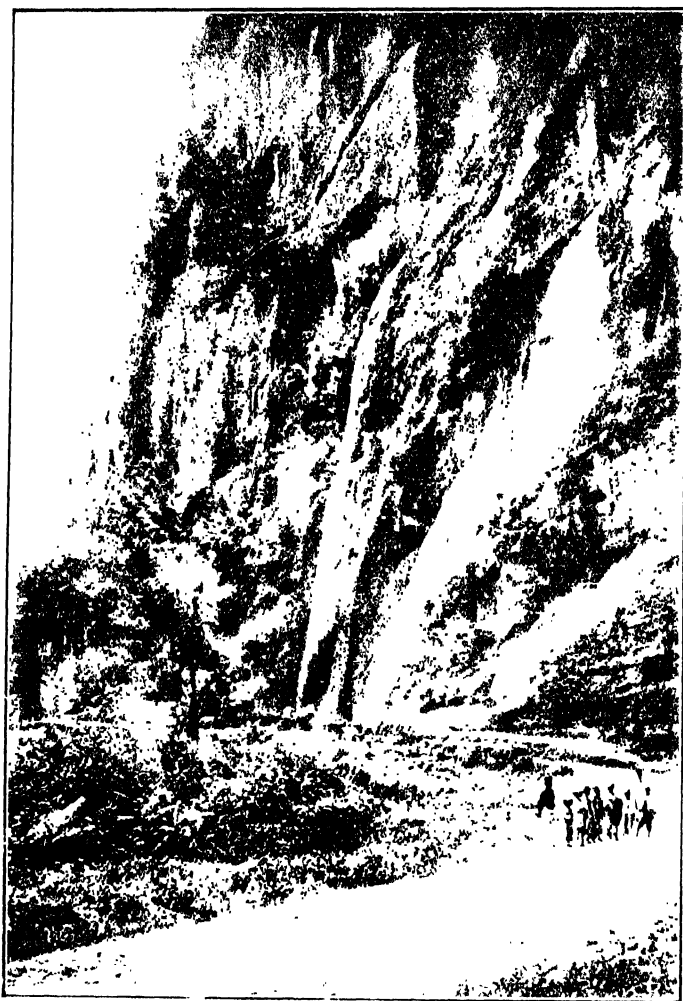
A body independent of the Indian Government, the General Chamber of Accounts (Algemeene Rekenkamer), controls the administering and auditing of the state finances and properties. The actual expenditure and revenue of any service year are considered settled only when the balance has been approved by the Dutch legislature.

In the loan raised by Holland in 1885 to the charge of the state, and in 1895 exchanged for a 5th ₁₀ money loan, the share of Dutch East Indies amounted to about *f* 55,100,000 nominal, that in the 5th ₁₀ loan of 1898 to about *f* 36,600,000 nominal, at the end of 1919.

In 1905 Holland raised a loan of *f* 40,000,000, the interest and repayment of which she took over to her own account, to cover the floating debt of the Dutch East Indies.

In 1915 the first loan was raised direct in the name of and chargeable to the Dutch East Indies, followed by new loans in 1916, 1917 and 1919. All loans were farnoted over. Conditions and subscriptions are set down in the following review, in terms of guilders.

Year of issue	Amount of loan	Rate of interest	Amount and rate of issue		Obligatory annual repayment	Subscribed		Balance unpaid end of 1919
			Holland	D. E. I.		In Holland	In D. E. I.	
1915	f 62,500,000	5 %	97		f 2,500,000	f 65,500,000	f 64,500,000	f 52,500,000
1916	.. 80,000,000	5 %	{ 50 mm. } à 99.50	{ 30 mm. } à 101.25	.. 2,000,000	.. 123,900,000	.. 21,700,000	.. 74,000,000
1917	.. 50,000,000	5 %	{ 30 mm. } à 99	{ 20 mm. } à 100.50	.. 1,250,000	.. 82,000,000	.. 28,700,000	.. 47,500,000
1919	.. 180,000,000	6 %	100.50		.. 4,500,000	.. 69,100,000	.. 169,400,000	.. 180,000,000



Palmyra Heights The Harau ravine

The fixed debt of the Dutch East Indies at the end of 1919, therefore, amounted to about f 425.000.000 nominal.

So far no exact distinction has been made in the budget between ordinary and extraordinary expenses, but in the draft and in the explanation of the proposed bill a distinction is made between extraordinary expenses, which according to the principles of good finance may be defrayed by loans, and ordinary expenses, which must be covered by the regular annual revenues.

The extraordinary expenditure over the period 1902 to and including 1918 were figured at f 487.000.000 and over the previous period, 1867 (the first year in which the Indian Law of Accountability was in effect) to and including 1901, at f 174.000.000, a total of f 661.000.000. Over the whole period, therefore, the loans have served to partly cover the expenditure for which may be loaned.

The world war and the changed conditions in political and economical circles resulting from it were and still are of great influence also on the finances of the Colony. The results over the period 1914-1918, in which the world war occurs, are consequently much less favorable than those of previous years. For this period there is even figured a deficit on the ordinary service of f 47.450.000, while for the year 1919 a deficit is expected on the ordinary service of f 28.000.000, a total of f 75.000.000. On the other hand, from the expenditure an amount of f 17.000.000 will revert to the Government treasury, while as yet only a small part of the taxes on war profits over the years 1914 to and including 1919 have been received, because the fixing of assessment appears to take a great deal of time.

The deficit, then, is in actuality only a seeming deficit, by which the floating debt is increased, it is true, but which will not give occasion for increasing the fixed debt.

In the meantime the changed conditions of the times put very heavy demands on the treasury, which can only be met by a contemporaneous increase of the state revenues. In connection herewith, the budget of 1920 counts on export duties of staple products, also taxes on the profits derived from the bringing forth of these products, increasing the excises, a tax on the obtaining of oil and a tax on transportation.

Review (in thousands of guilders) of some figures regarding the balances for the last ten years.

	Revenues	Expenditure			Balance of the ordinary service		Balance of the general service	
		Ordinary	Extra-ordinary	Total	Profit	Loss	Profit	Loss
1909	197.488	191.502	9.561	200.863	6.186			3.375
1910	221.516	213.670	17.757	231.427	7.846			9.911
1911	248.519	253.284	16.506	249.720	15.235			1.271
1912	270.550	247.796	21.229	269.025	22.754		1.525	
1913	311.354	287.836	59.255	327.071	23.518			15.717
1914	281.403	295.325	48.620	345.943		13.920		62.540
1915	309.734	306.554	41.555	347.887	5.400			38.153
1916	342.968	350.621	42.578	375.199	12.547			30.231
1917	360.759	365.952	55.525	419.275		5.193		58.516
1918	384.694	425.784	65.075	490.859		44.090		106.165

Revenues.

The Dutch East Indies derive their revenues from various sources, but chiefly from taxes, monopolies, products and industries.

Review (in thousands of guilders) showing the net revenues (i.e. after deducting the expenses) of various monopolies and industries, compiled from the data of the budget accounts.

	Taxes	Mono- polies	Products		Indus- tries	Miscel- laneous receipts
			Tin and coal	Others		
1913	102.893	55.540	29.828	3.994	11.068	6.810
1914	100.186	42.015	10.568	2.708	12.144	7.917
1915	112.194	40.968	22.414	4.382	16.377	7.983
1916	116.505	45.470	32.504	10.865	19.043	8.476
1917	115.940	49.813	29.958	8.062	18.802	12.363
1918	123.104	54.797	32.966	3.679	20.541	12.753

Expenditure

The net ordinary state expenditure for almost all matters under Government control moves in a continuously ascending line (a round total of £ 166,600,000 in 1913 to a round £ 275,000,000 in 1918, this last amount after deducting £ 17,000,000 for the purchase of rice, which amount reverts again to the state treasury).

This increase is caused by :

A more thorough administration of the Outlying Possessions.

Decentralisation of administration.

Improvement of the legal, police and prison systems.

Interest and redemption of the new Indian loans.

Extension of education.

Measures in the interest of public health.

The promotion of agriculture, cattle breeding and fisheries, industry and commerce.

The erection of buildings, improvement of irrigation and of means of communication by land and water.

Establishing the service of the water-power and electricity systems.

All these measures have entailed an increase in the number of civil servants, with a proportionate increase of expenses for pensions, allowances while on leave, traveling expenses and salaries for men on the waiting list, while the general rise in wages and in the standard of living necessitated improvements in the conditions of service.

The extraordinary expenditure, also, went up considerably during the last years, from a round £ 59,200,000 in 1913 to a round £ 64,500,000 in 1918.

During the period from 1913 to 1918 a round sum of £ 287,000,000 was taken up by extraordinary expenditure, among which are disbursements for: monopolies: Government pawnshops, salt farms;

products: the mining of tin, gold and coal, rubber estates;

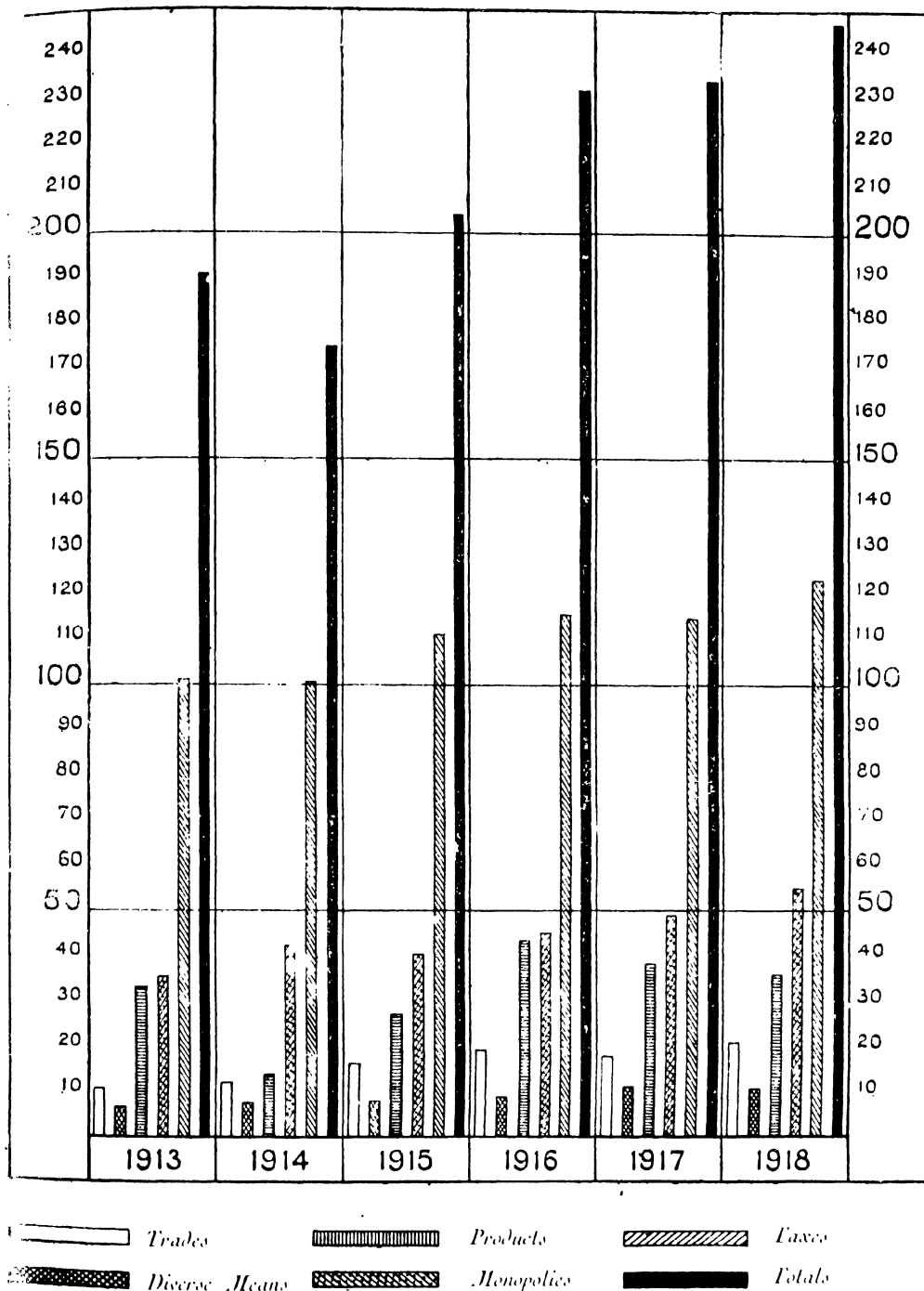
industries: railroads and tramways, also automobile services, telegraph and telephone, Government print shop;

further expenditure: the bringing back of private estates to the Government domain, advances to selfgoverning communities, providing of capital for the central bank, for the people's credit system and special banks, advances for improving houses in the interest of the fight against the plague, irrigation and other waterworks, measures taken in the interest of health, works for improving harbours and navigable waters, service for waterpower and electricity, transport services, electrical installation of the navy yard.

Review, in numbers of thousands of guilders, showing the extraordinary expenditure during the past six years.

	1913	1914	1915	1916	1917	1918
Monopolies	2.893	7.331	2.411	3.552	5.676	7.039
Products { Rubber . . .	4.451	2.395	1.975	3.644	5.043	5.497
Gold						
Tin						
Coal						
Government print shop	—	—	45	14	21	92
Postal, Telegraph and Telephone services . .	5.886	1.947	1.389	2.377	4.895	3.505
Govt. R. R. and automo- bile services.	18.405	22.074	20.821	19.526	24.580	27.419
Bringing back private es- tates to Govt. domain	—	—	—	—	785	8.927
Advances to selfgovern- ing communities. . . .	—	—	—	590	—	55
Furnishing capital for Native credit systems.	448	785	255	99	24	—
Advances house improv- ement (plague fight)	—	578	819	1.420	2.548	1.129
Irrigation and other wa- terworks.	295	169	161	196	240	364
Sanitary works	—	33	353	136	129	902
Harbours and fairways	7.971	15.058	15.024	10.251	7.804	7.883
Dredging service	—	—	—	—	—	867
Mining.	—	—	90	—	—	151
Waterpower and Elec- tricity	—	—	—	—	—	278
Transport service	71	74	133	92	106	392
Docks	695	—	7	—	—	—
Navy yard.	125	195	110	—	—	—
Other expenditures . . .	—	—	—	—	—	24

*Net revenues in millions of guilders in the years
1913, 1914, 1915, 1916, 1917 and 1918*



Taxes.

With regard to taxes, revenues are obtained from direct and indirect taxes.

To the direct taxes belong:

1. The Tax on Personal Property.
2. The Income Tax.
3. The Warprofit Tax.
4. The Ground Tax (Verponding).
5. a. The tax on industrial and other incomes in Java and Madura, imposed on Natives and Foreign Orientals.
- b. General tax on the industrial and other incomes in the provinces beyond Java, levied on Natives.
- c. The tax on the industrial and other incomes in the Outlying Possessions, imposed on Foreign Orientals and, in some provinces, also on specified groups of Natives.
6. Rural revenues (Landelijke inkomsten).
7. The Poll Tax, as an alternative to personnel service.

1. The Personal Tax has since January 1st, 1908, been uniformly levied on Europeans, those who enjoy the same rights and Foreign Orientals. It amounts to 5 $\frac{3}{4}$ % of the rental value of the house and to 2 $\frac{0}{10}$ % of the value of the furniture, while horses, bicycles, carriages and automobiles are also taxed.

2. The Income Tax was introduced January 1st, 1908, to take the place of the patent law.

This tax is levied on Europeans living in the Dutch East Indies and those with similar rights, with the exception of consular officials of foreign powers, who are of foreign nationality, providing they do not practice a trade or profession here; also on all joint-stock companies and similar corporations established in the Dutch East Indies, on all foreigners (physical and incorporated concerns) who exercise a trade or profession in the country, or who have a share in the profits of a partnership established in the Dutch East-Indies, as a firm, company, firm of shipowners, or kongsie (Chinese trading Company).

Incorporated concerns are taxed not only on their income but also on their yearly surplus.

The different classes of taxpayers are taxed according to different rates which are, with the exception of those concerning joint-stock companies and similar bodies, and foreign insurance companies, on a rising scale.

3. The Warprofit Tax. Under this name a tax is levied on increased incomes or profits which are a direct or indirect result of the war.

The tax was established during the course of 1917; it has retro-active power back to August 1st, 1914.

As the increase of income or profit is considered the amount by which the net income or the net profit over any year, which ends with or after August 1st, 1914, surpasses the average per year over the years to which August 1st, 1911, 1912 and 1913 belonged.

The tax is only levied on the amount by which the increase in any year surpasses / 3000.— and amounts to 30% of the taxable sum.

Taxes because of increased incomes are levied on actual persons; taxes because of increased profits on persons at law (joint-stock companies, co-operative societies, etc).

4. The Ground Tax. This is levied, with very few exceptions throughout the Dutch East Indies. It is imposed:

- a. on immovables, of which the ownership or any other essential right has been proved according to the general statutes.
- b. on immovables, the ownership of which was granted by the Royal Decree in the official Gazette of 1872, No. 117, but only if the said property is not already liable under the Land Tax or a similar imposition.
- c. on real property held by virtue of a title of ownership, resulting from assignments of the British Government from 1811 to 1816.

For property qualified under the heading „c” the tax amounts to 10% of the actual rental value (*verpondingswaarde*) for the others 5.4%. The rental value is fixed for five years by a commission appointed by the Governor General.

Exempt are all immovables, the taxes of which would have to be paid by the State, or immovables exclusively used for public service in self supporting districts or provinces; further, churches, public cemeteries, scientific or charitable institutions, conditional to the approval of the Governor General, unadministrated immovables without any essential right, in use by the State but entered under the name of others, conditional to the approval of the Director of Finances, certain immovables owned by the municipality of Medan according to contract of gift from the Selfgovernment in the district of Deli; and lastly immovables in the Principalities, of which the essential right is established in the Official Gazette of 1918, No 21.

5. Taxes on industrial and other incomes in Java and Madura.

This tax is the outcome of the „tenement tax” of Raffles, the revenue collected from all Natives who did not belong to the agricultural population and consequently were not subject to the land tax.

The tax is assessed on the ground on which the houses stand, for which reason it was later called the house tax. The Dutch Administration, after its return, maintained it in part and later on replaced it by a tax levied on all who practiced a trade or a handicraft.

In 1837 this tax was levied under the name of the Trade Tax, which has since undergone some revisions.

In 1907 it was replaced by a tax on trades and other incomes which, in subsequent years, was again several times revised.

The tax is levied at present not only on the income from trades, but also on the income from wealth, and is progressive.

The characteristic which formerly lay at its foundation, i.e. that it should affect only persons not liable to the payment of land tax, in one form or another, is preserved in so far, that incomes derived from lands falling under the working of landtax regulations, are exempt.

It is levied on all Natives and those holding the same rights, excepting the Native population of the Principalities. Furthermore is exempt the population of the so called „free villages”, in so far as these exemptions are registered, and, on account of ancient usage, recognized „perdikan dessas”.

The amount to be paid is calculated on the basis of the yearly income, but various incomes are exempt, among others, those coming from Government services, religious instruction and activities in connection with Government institutions, enterprises or works.

The tax is collected from the Natives by the village headmen, and from the Foreign Orientals by chiefs or officials appointed for this purpose. The collector gets 8% of the money collected, in payment for his services.

A tax on trade and other incomes, established on the same scale as the one in Java, is in force in the Outlying Possessions to replace the trade tax. It is levied:

a. On all Foreign Orientals, providing they are under the direct rule of the Dutch East Indian Government.

b. On all Natives in the province called Sumatra East Coast, providing they are under the direct rule of the Dutch East Indian Government, and on Natives in the residency of Riouw and Dependencies, who are working or living on agricultural estates.

On the 1st of January, 1914, a general proportional tax on trade and other incomes was introduced in most of the provinces outside of Java and Madura, for the purpose of supplanting the old poll-tax and similar burdens.

It is levied on all Natives who are under the direct rule of the Government, but exemption is granted to persons who either pay land tax or similar ground burdens, or who contribute a tenth part of the rice crop, as is done in some parts of the Outlying Possessions. Revenues which have been mentioned above as not falling under the progressive tax on trade and other incomes are also exempt in the case. ¹⁾

1) It is the purpose on January 1st, 1920, to replace the aforesaid income taxes by one general tax of equal nature for all nationalities and groups of population. In regulating this tax, as much account as possible will be taken of the principles which are the foundation of the income tax mentioned in place 2. Under this the tax on personal property will be extended to the Natives.

When this Year Book was assembled, this new regulation was not yet quite ready.

6. Rural revenues. Hereto belong:

the land tax in Java and Madura;

the tax on the fish-ponds in Java and Madura;

the land tax and similar levies in Bali and Lombok;

the tithe on the rice crop, and the „tesang” levy in Celebes;

the tithe levied in the province of South and East Borneo;

the renting of rights on fish-ponds, birds' nests and guano caves.

The Land Tax in Java and Madura. In 1907 a new land tax regulation was established for the lands under direct Government control in Java and Madura, with the exception of the Preanger Regencies, which regulation can only come into force gradually as its introduction entails new survey of the ground. In the districts where the new regulation has not yet come into force the old regulations hold good.

For the purpose of assessment the land is divided into „sawahs” (irrigated rice fields) and dry fields. To the latter belong the fish ponds and nipah groves.

The tax on „sawahs” must be considered as a levy on the crop, while that on non-irrigated fields is a form of ground tax.

The payment amounts to from 8 to 20% of the taxable produce of the „sawahs”, which is calculated from the cash value of the produce after a certain quantity of the rice has been put aside.

In the case of dry lands the tax is assessed according to the value of the land, the amount varying from 25 cents to f 20.— per „bouw” (= 7096,49 M²).

The assessment is made once every ten years.

Exemption may be granted in the case of land lying fallow or of failure of crops.

In the Preanger Regencies a regulation applies with regard to this tax, which in the main resembles those for Java and Madura.

Following the old land tax regulation, which is still partly in force, the lands are divided into ten classes, according to the average yield per bouw during the last three years preceding the assessment. The payment amounts to from 2 to 20 guilders per bouw.

The tithe on the rice crop in Celebes is a tax which is the value in money of a tenth of the harvested crop.

The value of the crop is calculated according to a standard which is fixed annually.

The „tesang” in Celebes consists of a third of the produce of the rice fields which have been lent to the Natives by the Government.

The tithe in the directly ruled province of South and East Borneo, is paid in money and amounts to a tenth of the estimated produce of the rice fields, the assessment being based on the average market price of padi during the preceding three years.

7. *Capitation.* This is payable by those liable to do statute labor. Besides taxes in money, the Dutch East Indian Government also demands personal service from the Natives in behalf of public works or public institutions. This is the so called statute labor.

As the demanding of these services had a historical foundation, the Dutch maintained them when they took over the government. In the course of years, however, measures were taken to lessen the pressure, among others by introducing measures for reducing the number of services, by permitting substitutes and accepting payment as an alternative.

Since many disadvantages are connected with the system, however, and since it may be considered out of date for a part of the people, the Government has abolished these personal services in Java and Madura and replaced them by a money tax.

Under this new regulation a reservation is made with regard to compulsory help in exceptional cases, such as catastrophes and public danger.

Against a remuneration, services may also be requested in aid of travellers or troops on the march, if no free labor is available and, in case public interest demands it, when difficult repairs are being made on irrigation works.

With the exception of a few provinces, statute labor is still rather generally demanded in the Outlying Possessions. Here also, however, an attempt is being made to abolish or to limit the tasks as much as possible.

Review of the revenues, in thousands of guilders, from the various direct taxes during a period of six years.

	Tax on Personal property	Income tax	War- profit tax	Ground tax	Trade tax	Capitation Statute labor	Land tax
1913	1.528	10.998	—	5.168	11.222	5.901	21.575
1914	1.668	9.759	—	5.590	10.000	5.678	21.467
1915	1.856	13.911	—	5.596	14.575	7.970	21.792
1916	2.006	15.060	—	5.248	14.256	9.267	21.724
1917	2.064	15.412	—	5.125	12.947	9.415	22.411
1918	2.241	19.559	4.709	2.776	12.912	9.556	22.610

To the indirect taxes belong:
the import and export duties;
the excise;
the tax on the transfer of property;
death duties;
the stamp duty;
the tax on butcher's meat;
various farmed out means.

Import and Export Duties. The levying of these right is not of a protective but of a fiscal nature. The Indian Tariff Act of 1872, which deals with the matter, has been repeatedly revised and in 1910 was re-issued, while since then several more revisions have been made. The tariff is the same for import from Holland and from foreign countries, and amounts to from 6 to 12 $\frac{1}{2}$ % of the value of the goods, while for some goods the amount is calculated according to size, number or weight, and others again are quite free.

In contrast with the mother country an export duty is levied on some articles in the Colony.

The tariff act empowers the Governor General to impose a duty on several articles in the Outlying Possessions. This duty is collected in most of the provinces of the Outlying Possessions and concern mainly products of the forest. In the year 1910 the regulations dealing with the matter were embodied in a single ordinance, which has since been somewhat revised.

The customs territory (tolgebied) i.e. these parts of the Colony in which import and export duty is collected in the name of the Dutch East Indian Government, has steadily increased in the course of the years, and at the present time comprises nearly the whole of the Dutch East Indies, especially since the Government has bought up this right from the various rulers of autonomic communities by paying them an indemnity. These rulers now enjoy fixed incomes instead of irregular revenues. Following the example of Singapore, Riouw was made a free port many years ago and has remained so to this day.

The Excise. This is levied on all home made alcoholic liquors, petroleum, matches and tobacco.

The excise on liquors distilled by Natives in Java and Madura was extended in 1874 to cover all such products distilled in the Dutch East Indies.

The petroleum excise, established in 1886 and since revised a few times, is levied on petroleum and volatile products distilled from petroleum imported for use from outside the excise territory and on petroleum and volatile products distilled from petroleum obtained from within the excise territory and intended for consumption.



Mountain river

Since 1893 duty has to be paid on matches of both foreign and domestic manufacture.

Since 1829 duty has to be paid in Borneo on certain kinds of imported tobacco.

The duty on the transfer of property. Contracts for the transfer of owning or the right of building on real estate are subject to what is called a transfer duty, which amounts to 5% of the value of the property. This tax is also levied on the entry or the transfer of ships with a tonnage of 4 koyangs or more, as well as on the transfer of such immovables and ships as a result of the death of non-Europeans. The regulation was already established in 1834 and has since then been revised somewhat. In 1885 the transfer of building rights was also declared liable.

Death duties (Recht van successie en overgang). The duty of succession is levied on the value of all property inherited by will or obtained in direct succession from a European or a person enjoying the same rights.

The „recht van overgang" is a tax which is levied on the value of all immovables located or established in the Dutch East-Indies and obtained from the inheritance of a person not residing in the Colony.

Stamp tax. This is raised on all legal documents and on petitions to the Government, to one of its officials or colleges and to officials of provinces or parts of provinces with independent financial means. The regulation, which dates from 1885, has since been repeatedly revised.

Tax on butchers' meat. Under this name was introduced on January 1st, 1899, in Java and Madura a tax on the slaughter of cattle, buffaloes, horses and colts, also on that of pigs. In the Outlying Possessions are found similar taxes, with provincial differences.

The farming of taxes. Some taxes and levies are not collected directly, but are farmed out. It is true that this is an antiquated system which is more and more being abolished, but it is still practised in the collecting of a number of small taxes.

In Java and Madura the only tax still farmed out is the exploitation of birdsnest-cliffs in five provinces.

In the Outlying Possessions the following small taxes are levied and farmed out in one or more provinces or parts of provinces: the right to keep pawnshops; the sale of alcoholic liquors, the slaughter of pigs, the running of ferryboats, the tax on pepper and various products of the forest, the right to import and sell salt and fish, the right to dig or wash for gold, the exploitation of birdsnest-caves.

The following table shows the revenues from the various indirect taxes during six years, in numbers of thousands of guilders.

	Farmed taxes	Import duty	Export duty	Excises	Stamp duty	Tax on transfer of prop- erty	Death duty	Tax on butchers meat
1913	2.580	25.189	2.744	11.797	2.461	1.058	250	2.311
1914	2.502	25.229	2.000	11.259	2.449	1.035	177	2.354
1915	1.898	22.705	2.699	12.290	2.262	973	172	2.550
1916	1.732	24.858	5.095	12.141	2.608	1.320	167	2.982
1917	1.796	25.860	2.016	12.460	2.728	1.893	244	3.327
1918	756	25.504	1.579	12.080	3.494	2.160	459	3.063



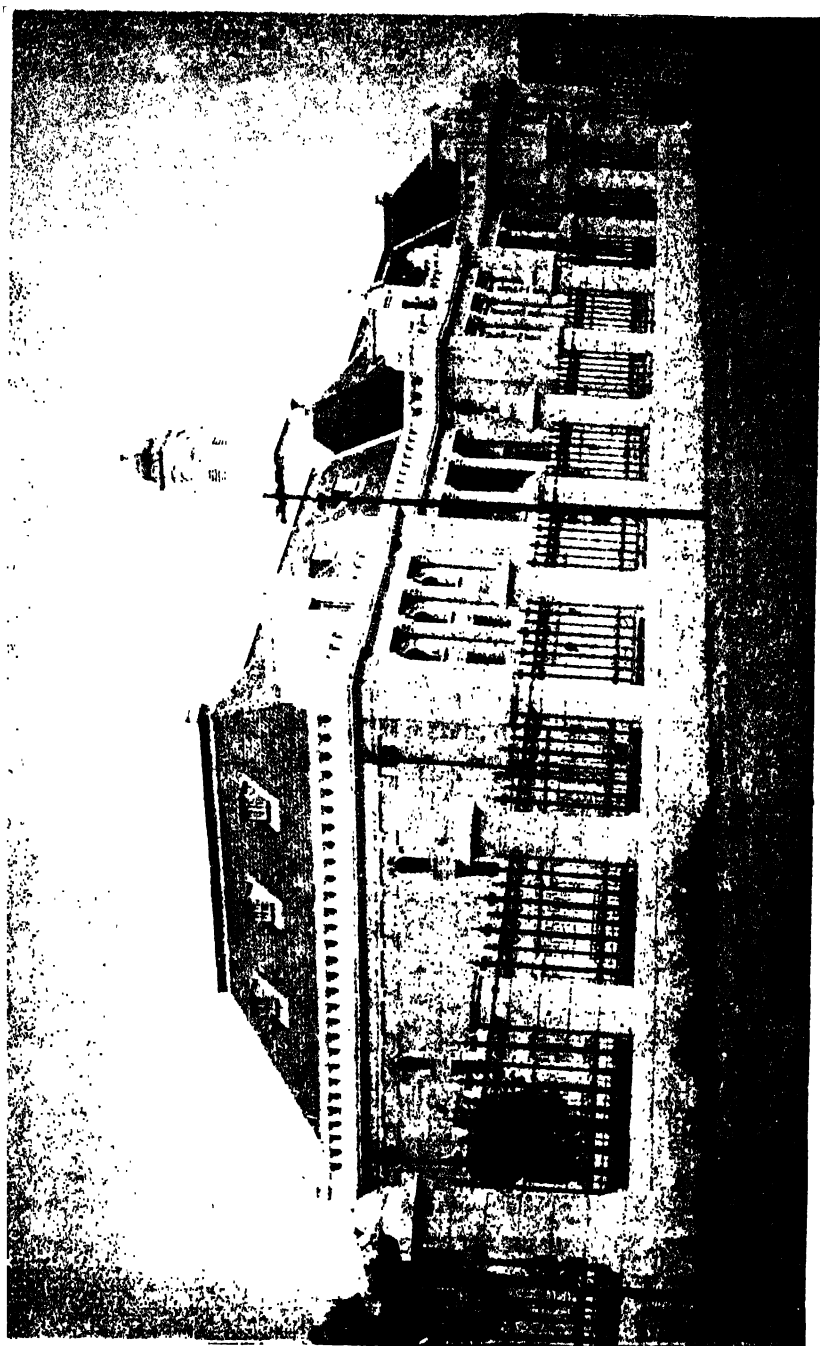
BANKING

Banking Institutions

Postal Savings Bank

Popular Credit Institutions

The Monetary System



Book-building



CHAPTER IV.

Banking Institutions.

The Java Bank.

Among the banking institutions the Java Bank occupies a special position. It is the Bank of Issue of the Dutch East-Indies. The right to act in this capacity has been granted by a Government Charter. The Charter now in force was established by Royal Decree, dated January 2nd, 1906, No. 26 (Indian Gazette No. 107), revised by Royal Decree of May 7th, 1909, No. 56 (Indian Gazette No. 565) and supplemented by Government Ordinances of August 5th, 1914 (Indian Gazette Nos. 537, 538 and 539). It expires on April 1st, 1921. A new Charter is in course of preparation.

The Charter granted to the Java Bank gives it the exclusive right to issue notes in the Dutch East-Indies, provided they are of no lower denomination than *f* 5.—.

The notes now issued are of the following denominations: *f* 1,000.—, *f* 500.—, *f* 500.—, *f* 200.—, *f* 100.—, *f* 50.—, *f* 40.—, *f* 30.—, *f* 25.—, *f* 20.—, *f* 10.— and *f* 5.—.

The issue of notes is not limited to any maximum figure, but the Bank's demand liabilities, i.e. the total amount of the outstanding bank notes and bank drafts plus the amount of the deposits must be covered by coin and bullion to the extent of 40% (Since the Ordinance of August 5th, 1914, D.E.I. Gazette No. 538 to the extent of 20%). Of this metal reserve, at least three quarters must be held in the Dutch East-Indies, while at least half of this obligatory metal reserve must consist of standard coins of the Dutch East-Indies.

The bank notes issued by the Java Bank are legal tender (Ordinance of August 5th, 1914, D.E.I. Gazette 1914 No. 537).

The business which the Java Bank is allowed to transact is outlined in Article 7 of its Charter as follows:

I. Discounting of:

- a. Bills of Exchange or Promissory Notes or other commercial paper bearing two or more signatures and with no longer usance than is customary in the trade, in no case exceeding six months.
- b. Exchequer Bonds or Treasury Bills issued by Dutch, Dutch Indian or foreign Governments and Debentures issued by private corporations or companies, provided such acknowledgments of indebtedness are redeemable within a period not exceeding four months, and with the additional guarantee of the person applying for discount.
- c. Government Acceptances against proceeds of public sales, so called „Government Auction Promissory Notes”. (All public sales in Netherlands India are under the control of the Government, which guarantees the proceeds of such sales to the vendors by handing them acceptances payable from three to six months after the date of the sale.)

II. Granting Loans and making Advances in current account against the security of:

- a. Stock, either Government stock, or shares and bonds of private corporations or companies.
- b. Produce, goods or other merchandise, coin or bullion, or the documents relating to the shipment or storage thereof.
- c. Bills and Notes as enumerated sub I.

III. Temporary investment of surplus balances at Amsterdam in Stock Exchange Loans.

IV. Buying and selling of Bills of Exchange payable abroad, having no longer usance than is customary in the trade and

- a. bearing not less than two signatures or
- b. drawn against banker's credits or under hypothecation of the shipping documents.

V. Buying and selling of bullion, foreign coin and notes and assaying precious metals and ores.

VI. Receiving moneys on current account and paying out cheques drawn against such deposits; collecting moneys, both for public corporations and private individuals.

VII. Taking into safe custody, moneys, securities and other objects and goods, and carrying out the administration connected with the safe custody of such valuables.

VIII. Effecting transfers, both by telegraph and by letter, between its offices in Netherlands India, between these offices and its branch office at Amsterdam, and between its offices and its foreign banking correspondents. Drawing on its foreign balances must be by telegraph or at sight.

- IX. Investing its capital in Dutch and Dutch Indian Government Stock or in Bonds listed on the Amsterdam and Batavia Stock Exchanges or on the principal European Bourses, or in first mortgages on real property in Netherlands India.
- X. Under special circumstances, at the judgment of the Governor General and as far as he deems necessary, under conditions to be laid down by him, the granting of loans and advances against the security of mortgage bonds or other contracts of indebtedness liable to be transferred and pledged.

The Java Bank does not entertain any other business than that described above. Moreover, it may not grant blank credit to anyone whomsoever; it may not interest itself in any commercial, industrial or other undertaking and is not allowed to purchase its own shares or to grant loans on the security of same. It may not deal in real property and may not make advances on the mortgage of ships. It does not allow interest on credit balances in current account.

In all places where it has offices the Java Bank acts free of charge as Government banker. It also acts free of charge as banker to the Postal Savings Bank in the Dutch East-Indies and as custodian of the securities of this institution.

The Java Bank furthermore takes all possible care of the regulation of currency in the Dutch East-Indies. It assists the Government in the issue and distribution of standard silver coin, subsidiary coin and currency notes. It promotes the movement of currency by means of giro transfers between accounts kept at its various offices and has established a daily clearing in the principal cities, Batavia, Sourabaya, Semarang and Medan.

To the best of its ability the Java Bank strives to maintain the gold parity of the domestic silver and paper currency in relation to foreign currencies.

For this purpose it invests part of its resources in foreign bills, and keeps gold deposits and balances both in Holland and with its correspondents in London, Berlin, New York, San Francisco, Yokohama and Singapore. Whenever the maintenance of the gold parity of the Dutch East-Indian guilder requires it, the Bank buys or sells foreign bills and increases its gold deposits and balances in foreign countries, or it reduces them by placing gold at the disposal of the public and by ordering payments in foreign countries. The embargos placed on the free movement of gold in most countries and the refusal of nearly all central banks of issue to meet their liabilities in gold are for the present seriously interfering with the policy of the Java Bank to try and maintain under all circumstances the parity of exchange between domestic and foreign currencies.

The working sphere of the Java Bank as the central institution in monetary and credit systems of the country has been gradually expanding

in proportion to the growing economic development of the Dutch East-Indies, and by using every means in its power it has, since the outbreak of the war in 1914, secured as much as possible the undisturbed working of commerce, industry and agriculture. The extension which the operations of the Java Bank have taken in the last few years may be seen from the following comparative figures relating to some parts of its business.

Coin and Bullion.

	Gold	Silver	Total	Average cover for Liabilities.
Mar. 31, 1909	11.800.000	28.900.000	40.700.000	49.5 0/
„ 31, 1914	24.900.000	29.100.000	54.000.000	43.9 „
„ 31, 1919	128.300.000	10.300.000	138.600.000	40.5 „
Jan. 3, 1920	172.300.000	3.300.000	175.600.000	42.6 „

Interest Earning Assets.

Discounts.

	Payable in the D. E. I.	Payable outside the D. E. I.
Mar. 31, 1909	3.700.000	11.800.000
„ 31, 1914	5.500.000	11.700.000
„ 31, 1919	8.300.000	20.400.000
Jan. 3, 1920	15.000.000	13.000.000

Advances against security of:

	Goods	Bills and Securities	Gold and Silver
Mar. 31, 1909	3.500.000	9.100.000	20.000
„ 31, 1914	6.800.000	31.300.000	300.000
„ 31, 1919	33.800.000	50.200.000	500.000
Jan. 3, 1920	38.800.000	125.900.000	100.000

	<i>Money on short notice in Netherland</i>	<i>Advances to the Government</i>	<i>Total Advances and Discounts</i>
Mar. 31, 1909	12.100.000	—.—	40.220.000
„ 31, 1914	4.700.000	8.600.000	68.900.000
„ 31, 1919	—.—	85.700.000	198.900.000
Jan. 3, 1920	—.—	2.800.000	195.600.000

Liabilities.

	Bank Notes in Circulation	Deposits	Bank drafts payable	Total
Mar. 31, 1909	70.300.000	11.400.000	500.000	82.200.000
" 31, 1914	111.900.000	9.700.000	1.300.000	122.900.000
" 31, 1919	214.300.000	123.100.000	4.800.000	342.200.000
Jan. 3, 1920	311.800.000	96.300.000	4.100.000	412.200.000

Giro Transactions.

		Local Transfers		Interlocal Transfers	
		Number	Amount	Amount	Total
Book Year	1913/14	34.000	258.000.000	137.000.000	395.000.000
"	" 1918/19	59.000	573.000.000	380.000.000	953.000.000

Clearing.

Total Batavia, Sourabaya, Semarang and Medan

			Number	Amount
Book Year	1909/10		28.000	185.000.000
"	" 1913/14		145.000	867.000.000
"	" 1918/19		441.000	2.934.000.000

The Bank's discount rate has been standing at $3\frac{1}{2}\%$ since August 1st, 1909.

The Java Bank publishes a weekly Statement of its position in the Java Official Gazette.

The Head Office of the Java Bank is established at Batavia. It has also offices in Bandoeng, Sourabaya, Semarang, Cheribon, Soerakarta, Djokjakarta and Malang, in Sumatra at Medan, Tandjong Poera, Tandjong Balei, Bengkalis, Kota Radja, Padang and Palembang, in Borneo at Bandjermasin and Pontianak, in the Celebes at Macassar and Menado. A branch office is established in Amsterdam.

The Java Bank was established as a private institution in 1827, by Government Decree of December 11th (State Gazette 111) and was converted into a limited liability company in 1881 by notarial deed dated March 22nd, in conformity with the regulation of the Dutch East-Indian Code of Commerce.

The capital of the Bank amounts to f 6.000.000.—, divided into shares of f 500.— and f 250.—. All shares are registered stock, they are fully paid up and are owned by private individuals.

The Government, though not a shareholder, shares in the Bank's profits.

A register in duplicate, i.e., one in Batavia and one in Amsterdam, is kept of the shareholders and their shares.

The management of the Bank is in the hands of a Directorate, established in Batavia and consisting of three members, namely a President, a Director and a Director-Secretary. They are appointed for five years by the Government from a nomination made up by the Directors and Commissioners.

Only in case of the appointment of a President has the Government authority to deviate from this nomination.

For supervision a Council of Commissioners, consisting of five members, is elected by the shareholders, in addition to which a Government Commissioner is appointed by the Governor General.

On March 31st, 1919, the Reserve Fund amounted to f3,942,000.—.

Other Banking Institutions.

Besides the Java Bank there are many other banking institutions, which are of very great importance to commerce and agriculture. Some of these carry on a banking business pure and simple, while others act also as agricultural credit banks. A few are exclusively agricultural credit banks.

Of these banking institutions the following deserve mention:

The „Nederlandsche Handel Maatschappij”.

The „Nederlandsch-Indische Handelsbank”.

The „Nederlandsch-Indische Escompto Maatschappij”.

The „Uniebank voor Nederland en Koloniën”.

The „Nederlandsch-Indische Effecten- & Prolongatiebank”.

The „Koloniale Bank”.

The „Nederlandsch-Indische Landbouw Maatschappij” (agricultural bank, of which the „Nederlandsche-Indische Handelsbank” owns nearly all the shares).

The „Internationale Crediet- & Handelsvereniging „Rotterdam”.

The „Handelsvereniging Amsterdam”.

The „Cultuur Maatschappij der Vorstenlanden”.

The „Nederlandsch-Indische Hypotheekbank”.

The Chartered Bank of India, Australia & China.

The Hongkong & Shanghai Banking Corporation.

International Banking Corporation.

Mercantile Bank of India.

Yokohama Specie Bank Ltd.

Bank of Taiwan Ltd.

The „Universeele Beleggingsbank”.

The „Koloniale Cultuur- & Handelsbank”.

The „Naamlooze Vennootschap Bataviasche Bank”,
 Deli Bank,
 Chung Wah Bank, } Chir
 „Bankvereeniging” Oei Tiong Ham
 China and Southern Bank Ltd. (Japanese/Chinese).

The following gives a few particulars regarding the more prominent of the banking institutions, both those which carry on exclusively a banking business and those which act also as agricultural credit banks.

The „Nederlandsche Handel-Mij” (Netherlands Trading Society) was established on March 29th, 1824 at the Hague as a result of the instigation of King William I, who personally with f 4,000,000.— participated in the capital, which originally was fixed at 37 millions of guilders (subscriptions having been received for 70 millions). The King moreover personally guaranteed an annual dividend of $4\frac{1}{2}\%$. The company was floated for the purpose of fostering Dutch trade, shipping, shipbuilding, fishing, agriculture and industries; the articles of association however prohibited dealing in stocks and exchange.

In the beginning trade was carried on also with America, China British India, Persia, Arabia and East-Mediterranean ports but soon the attention of the Society was concentrated on Java.

Previous to 1883 the Society acted chiefly in commercial affairs, but since then exchange- and banking business was started on a somewhat larger scale.

After banking was taken up the society has gradually grown to be the first banking-institution of Holland and her Colonies and also holds a prominent position in the international money-market. They established branches at various points in the East outside of Netherlands India, in South America they interested themselves in the Netherlands Bank for South America, in Russia in the Netherlands Bank for Russian Trade, in Holland in the „Geldersche Credietvereeniging” and other provincial Banks.

At present they have own branches in Holland: besides the Amsterdam Headoffice, at Rotterdam and the Hague (1910); in Java: at Batavia (Eastern Headoffice, generally known as „the Factory”), Weltevreden, Sourabaya, Semarang, Cheribon, Tjilatjap, Bandoeng (1911), Tegal, Pekalongan, Djokjakarta (1915), Solo (1915) and Djember (1909); in Sumatra: at Medan (Deli), Padang, Palembang, Telok-Betong (1912), Kota-Radja (1904), Tebing-Tinggi (1911) and Langsa (1917); in Celebes: at Macassar (1910), and in Borneo: at Bandjermasin (1905) and Pontianak (1915); outside of Netherlands India at Singapore, Penang, Rangoon, Hongkong (1906), Shanghai (1903) and Kobe (1920). The Society is also established in Surinam (Dutch West Indies) where they have a sugarmill. They have correspondents all over the world.

The Company's capital was raised in 1901 to 45, in 1913 to 75 and in 1918 to 100 millions of guilders, of which had been issued 50 millions in 1914, 60 in 1916, 70 in 1918 and 80 millions in 1919. The reserve-fund from 1909 — 1918 increased from f 6.125.000.— to f 14.590.000.—, the special reserve from f 400.000.— to f 17.000.000.—, the Company's profit from f 4.782.000.— to f 12.651.000.—, loans and advances in Holland from 24 to 126 millions, sundry debtors from 12 to 125 millions, fixed deposits from 35 to 82 millions, current accounts and sundry creditors from 17 to 184 millions, the total of one side of the balance-sheet from 133 to 382 millions; the last 10 dividends declared were 9, 9, 9½, 9½, 9½, 8, 10, 15, 12 and 14%.

From 1909—1918 one side of the combined balance-sheet of the offices in the East showed an increase from 75 to 195 millions of guilders, loans and advances rose from 21 to 80, deposits and current accounts from 53 to 160 millions. In spite of the war exchange operations increased from 518 to 617 millions, amounts paid into and withdrawn from fixed deposits and current accounts from 1.133 to 3.244 millions, and the profit from f 2.543.000.— to f 5.689.000.—.

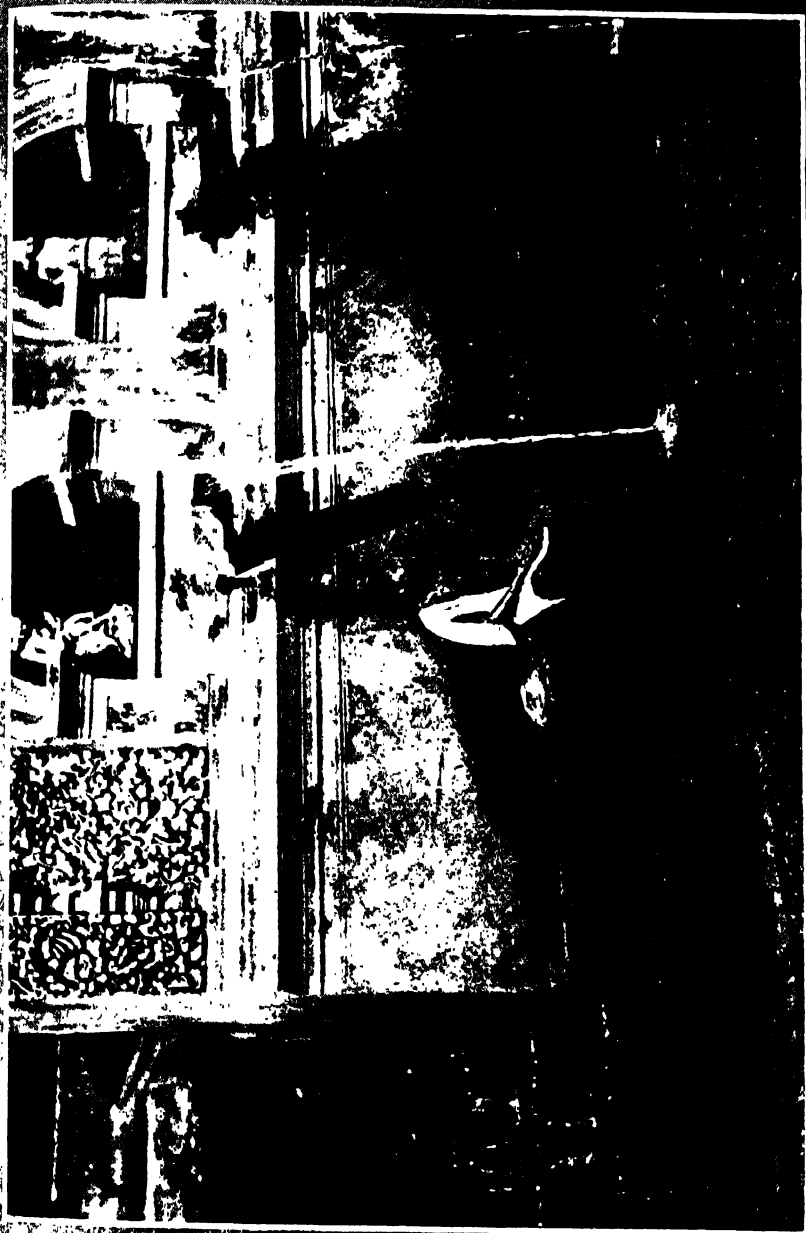
In 1909 the Society owned fully or partly fourteen sugarmills (appearing in the balance-sheet at f 7.468.000.—) and financed and sold the product of another nineteen sugarmills. In 1918 these figures were 16 (f 8.862.000.—) and 28 with a total production of about one fifth part of the total sugar-crop of Java.

On account of the war the amount of bales of tobacco sold decreased from 65.000 to 30.200, coffee consigned for private estates from 180.000.000 to 6.050.000 K.G., consignments of Government coffee from 40.132 to 4.432 bales, the sales of Government tin from 347.459 to 2.361 slabs. Consignments of tea increased from 2½ to 6½ millions of half-Kilograms, those of rubber in 1918 amounted to 3.197.000 Kilograms, consignments of various other products considerably increasing.

The Netherlands Trading Society (by financially interesting herself in various enterprises for instance) in the course of time has gone on taking an active part in furthering the development of trade, agriculture and industries in the Netherlands and in Netherlands India, especially so during this century in which these colonies are greatly flourishing.

The „Nederlandsch-Indische Handelsbank” (Netherlands India Commercial Bank).

This Bank was established in 1863 with a capital of Glds. 1.500.000.—, which has since been increased to Glds. 60.000.000.— of which Glds. 45.000.000.— are issued and fully paid up. The reserve-fund at present amounts to more than Glds. 29.000.000.— whilst Glds. 1.451.381.97 have been reserved for special purposes. From the paid-up capital Glds. 11.995.000.—



Bathing Place at Tedjakoele (North Bali)

have been invested in shares of the „Nederlandsch-Indische Landbouw Maatschappij” (Netherlands Indian Agriculture Company) which company has a paid-up capital of Glds. 12.000.000.—.

These shares are taken up in the Bank's Balance Sheet at par, but the respective amount represents an asset of a much higher value in connection with the high intrinsic value of these shares.

During the last few years the Bank's business has become very prosperous and has undergone an important increase, which may appear from the undermentioned figures.

Year	Capital	Reserve	Net profit	Dividend
1909	Glds. 12.599.550,—	Glds. 2.953.397,89	Glds. 1.786.200,48	12 %
1910	„ 12.401.050,—	„ 3.252.157,01	„ 3.597.782,73	23 „
1911	„ 14.905.350,—	„ 5.022.161,27	„ 2.665.407,61	18,50 %
1912	„ 14.907.000,—	„ 5.023.542,87	„ 2.567.947,85	15 %
1913	„ 17.407.900,—	„ 6.520.583,62	„ 2.350.775,64	12 „
1914	„ 19.943.000,—	„ 7.777.744,09	„ 2.217.518,06	10 „
1915	„ 20.000.000,—	„ 7.812.701,17	„ 3.187.436,88	14 „
1916	„ 30.000.000,—	„ 14.012.379,97	„ 6.717.324,99	23 „
1917	„ 30.000.000,—	„ 14.014.701,40	„ 4.069.378,26	12 „
1918	„ 35.000.000,—	„ 17.377.626,77	„ 6.843.164,18	17 „
1919	„ 45.000.000,—	„ ± 29.000.000,—	—.—	—.—

The Bank's Head-Office is established at Amsterdam with a Sub-Office at The Hague. The Eastern Head-Agency is at Batavia with a Sub-Office at Weltevreden, whilst Branches are established at Ampenan, Bandoeng, Cheribon, Indramajoe, Macassar, Menado, Medan, Pekalongan, Probolinggo, Semarang, Sourabaya, Tegal, Tjilatjap, Singapore, Hongkong, Shanghai and Kobe.

The „Nederlandsch-Indische Handelsbank” has become one of the leading banks and transacts banking business of every description, whilst she has correspondents all over the world and is especially aiming at developing the commercial resources of the rich oversea dominions of the Netherlands and facilitating foreign trade.

The „Nederlandsch-Indische Escompto Maatschappij”.

This society was established at Batavia in 1857 with a capital of *f* 1.000.000.—, which has since been increased to *f* 25.000.000.—. This capital is now issued and fully paid up. The reserve fund amounts to about *f* 5.800.000.— This fund is not used in the business, but is invested quite separately in giltedged securities.

The Company does purely a banking business.

The following figures show the development of this institution during the past ten years.

	Capital stock	Issued and fully paid up	Reserve fund	Gross profit	Dividend
1909	<i>f</i> 12.000.000	<i>f</i> 7.500.000	<i>f</i> 1.050.000	<i>f</i> 667.848,21	8 %
1910	„ 12.000.000	„ 7.500.000	„ 1.000.000	„ 666.120,34	8 „
1911	„ 12.000.000	„ 7.500.000	„ 1.150.000	„ 668.996,28	8 „
1912	„ 12.000.000	„ 9.000.000	„ 1.577.486,75	„ 855.902,98	8,50%
1913	„ 12.000.000	„ 10.500.000	„ 1.975.018,82	„ 975.952,46	8,50 „
1914	„ 12.000.000	„ 10.500.000	„ 2.025.417,42	„ 651.602,21	6 %
1915	„ 12.000.000	„ 10.500.000	„ 2.057.944,53	„ 999.540,91	8,50%
1916	„ 12.000.000	„ 12.000.000	„ 2.599.073,57	„ 1.505.111,27	10 %
1917	„ 25.000.000	„ 15.000.000	„ 5.450.139,08	„ 1.851.418,10	10 „
1918	„ 25.000.000	„ 20.000.000	„ 4.610.121,49	„ 2.018.244,53	10 „
1918	„ 25.000.000	„ 25.000.000	—	—	—

The headoffice is established at Batavia.

Agencies are established at Amsterdam, the Hague, Sourabaya, Semarang, Macassar, Padang, Bandoeng, Cheribon, Djokja, Tegal, Medan, Weltevreden and Sourabaya.

The „Uniebank voor Nederland en Kolonien”.

This bank was established in 1914 at Amsterdam, with a capital of *f* 5.000.000.—, which has since been increased to *f* 15.000.000.—, of which *f* 8.000.000.— are now issued and fully paid up.

The development of the Bank may be seen from the following figures:

	Capital fully paid up	Deposits	Debtors	Net Profit	Dividend
1915	f 1.000.000	f 329.900	f 2.251.400	f 73.664,61	5 %
1916	„ 2.000.000	„ 1.218.200	„ 5.126.300	„ 245.055,98	7 „
1917	„ 3.500.000	„ 3.897.600	„ 9.155.700	„ 560.637,92	7 „
1918	„ 4.000.000	„ 3.684.800	„ 15.184.300	„ 617.091,47	7 „
1919	„ 8.000.000	—.—	—.—	—.—	—.—

The headoffice is established at Amsterdam.

The Bank also has offices in Holland at Rotterdam, Tilburg, Leeuwarden, Lochem, Borculo, Oisterwijk, and in the Dutch East-Indies at Batavia, Sourabaya, Semarang, Medan, Banda and Weltevreden.

The „Nederlandsch-Indische Effecten- en Prolongatiebank”.

This bank was established in 1912 at Batavia with a capital of f 5.000.000.—, of which f 1.000.000.— are issued and fully paid up.

The object of this Bank is the carrying on of a stock and commission business, buying and selling of shares in banks and other limited companies, government-bonds, shares and bonds of foreign and domestic companies, opening of credits against securities and all other kinds of stock exchange business; foundation of joint-stock companies, promoting and warranting of issues of bonds and shares and all other kinds of business in connection with the above, for its own account as for third parties.

Its development may be seen from the figures below:

	Capital	Issued and fully paid up	Reserve fund	Gross profit	Dividend
1912	f 5.000.000	f 1.000.000	—.—	f 102.925,74	5 %
1913	„ 5.000.000	„ 1.000.000	—.—	„ 95.180,67	6 „
1914	„ 5.000.000	„ 1.000.000	—.—	„ 60.511,42	—.—
1915	„ 5.000.000	„ 1.000.000	—.—	„ 42.115,39	4 %
1916	„ 5.000.000	„ 1.000.000	f 7.746,12	„ 88.446,40	7.50 %
1917	„ 5.000.000	„ 1.000.000	„ 15.857,16	„ 91.114,15	7.50 „
1918	„ 5.000.000	„ 1.000.000	„ 25.902,79	„ 98.239,51	8 %
1919	„ 5.000.000	„ 1.000.000	—.—	—.—	—.—

The „Koloniale Bank“.

This Bank is an agricultural credit bank. It was established in 1881 at Amsterdam with a capital of *f* 10.000.000.—, which has since been increased to *f* 15.000.000.—, of which *f* 13.375.000.— are issued and fully paid up. On a 4⁰/₀ bond loan, pro resto amounting to *f* 1.700.000.— the sum of *f* 100.000.— is paid yearly.

The development of the Bank during the past ten years is shown by the following figures.

	Capital fully paid up	Bond-loan	Reserve fund	Profit	Dividend
1910	<i>f</i> 10.000.000	<i>f</i> 2.500.000	<i>f</i> 1.024.842,47	<i>f</i> 893.588,67 ^s	7 ⁰ / ₀
1911	„ 10.000.000	„ 2.400.000	„ 1.175.229,92	„ 940.569,78	7 „
1912	„ 10.000.000	„ 2.300.000	„ 1.238.003,28	„ 1.049.451,72 ^s	8 „
1913	„ 11.000.000	„ 2.200.000	„ 1.441.709,03	„ 835.515,58 ^s	6.50 ⁰ / ₀
1914	„ 11.000.000	„ 2.100.000	„ 1.329.090,37	„ 791.454,12	6 ⁰ / ₀
1915	„ 11.000.000	„ 2.000.000	„ 1.533.368,06	„ 1.082.219,85	8 „
1916	„ 11.000.000	„ 1.900.000	„ 2.191.638,73	„ 1.741.144,21	12 „
1917	„ 11.000.000	„ 1.800.000	„ 2.610.124,60	„ 547.172,76	5 „
1918	„ 13.750.000	„ 1.700.000	„ 2.959.420,88	„ 1.160.987,13	7 „

The head office of the Bank is established at Amsterdam; a head agency at Sourabaya and an agency at Semarang.

The Chartered Bank of India, Australia and China.

This bank was established in London in 1853; the Batavia Branch was opened in 1862, that in Sourabaya in 1876 and that in Medan in 1888.

From figures below may be seen the full extent of the development of the banking business. Figures exclusively regarding the Bank established in the Dutch East-Indies, are not available.

	Capital	Reserve fund	Net profit	Dividend
1890	£ 800.000	£ 250.000	£ 95.103	8 ⁰ / ₀
1895	„ 800.000	„ 325.000	„ 74.358	9 „
1900	„ 800.000	„ 525.000	„ 111.533	10 „
1905	„ 800.000	„ 875.000	„ 277.112	14 „
1910	„ 1.200.000	„ 1.600.000	„ 276.364	14 „
1913	„ 1.200.000	„ 1.700.000	„ 375.254	17 „
1914	„ 1.200.000	„ 1.800.000	„ 396.334	14 „
1915	„ 1.200.000	„ 1.800.000	„ 399.205	14 „
1916	„ 1.200.000	„ 1.800.000	„ 427.466	17 „
1917	„ 1.200.000	„ 1.800.000	„ 476.261	19 „
1918	„ 1.200.000	„ 2.000.000	„ 492.482	20.25 ⁰ / ₀
1919	„ 2.000.000	„ 2.900.000	—.—	—.—



Боксочоцок. Image of Dhyani-Buddha (Amoghasiddha)

The head office of the Bank is established at London; it has branches in British India, Burma, Ceylon, Straits Settlements, China, Japan the Dutch East-Indies and New York.

The Hongkong and Shanghai Banking Corporation.

This bank was established at Hongkong in 1867. The capital of \$ 15,000,000.— is fully paid up. The reserve fund amounts to \$ 56,000,000.—, of which \$ 15,000,000.— (£ 1,500,000) is invested in London in the 5⁰/₁₀ war loan 1929, 1947.

The dividend over 1918 amounted to 51,2 ⁰/₁₀.

The head office for the Dutch East-Indies is established at Batavia, with a sub-office at Semarang and Cheribon.

The Yokohama Specie Bank Ltd.

This bank was established in 1880 at Yokohama. The capital amounts to Y 100,000,000.—, of which Y 61,000,000.— was fully paid up September 30th, 1919. The reserve fund on this date amounted to Y 28,000,000.—.

Over the first half of the year 1919 a dividend to the amount of 12 ⁰/₁₀ a year was paid out.

The head office of the Bank is established at Yokohama. It has branch offices in Tokio, Osaka, Nagasaki, Kobe, Shinonoseki, London, Lyons, New York, San Francisco, Los Angeles, Rio de Janeiro, Buenos Aires, Seattle, Honolulu, Bombay, Calcutta, Rangoon, Sourabaya, Batavia, Sydney, Manila, Singapore, Shanghai, Hongkong, Tsingtau, Hankow, Tientsin, Tsinan, Newchang, Peking, Fengtien, Dairen, Changchun, Kai-Yuan, Wladiwostok and Harbin.

Savings Banks.

Besides the Postal Savings Banks and the banking institutions of the people's credit system, which also gives the population an opportunity for saving and which are spoken of more in detail later on, the following savings banks are found in the Dutch East-Indies:

the Batavia Savings Bank,

the „Algemeene Spaar- & Depositobank” at Batavia,

the „Soerabajasche Incasso-, Spaar- & Hulpbank”,

the Semarang Savings Bank,

the Bandoeng Savings Bank,

the „Spaarbank van de Maatschappij tot het Nut van het Algemeen” at Sourabaya,

the Padang Savings Bank,

the Savings Bank „Minahassa” and

the Ambonese Savings and Credit Bank.

Postal Savings Bank.

The Postal Savings Bank in Netherlands India was established in 1897 and began doing business July 1st, 1898.

The services of this institution are available at all post- and telegraph offices, and branch post offices, as well as at most of the auxiliary post offices, while since July 1st, 1918, as an experiment, opportunity is also given to invest money and to get it back in the Government pawnshops in the province of Rembang.

Following are some statistical data regarding the work of the Postal Savings Bank.

December 31st, 1918, the following took part in the service:

a.	post- (and telegraph-) offices,	184
b.	branch post offices,	11
c.	auxiliary post offices,	223
d.	Government pawnshops,	29

Total number offices 447

Division and total of the number of savingsbankbooks

End of Year	Europeans A	Natives B	Foreign Orientals C	Total	Percentage relation to the total		
					A	B	C
1914	50.981	65.132	6.316	122.429	41,64	53,20	5,16
1915	53.711	70.324	6.874	130.909	41,03	53,72	5,25
1916	56.762	76.548	7.653	140.963	40,27	54,50	5,43
1917	60.506	83.912	8.577	152.795	39,47	54,92	5,61
1918	64.222	92.602	9.614	166.438	38,58	55,64	5,78

Division and total of deposits (in guilders)

End of Year	Europeans A	Natives B	Foreign Orientals C	Total	Percentage relation to the total		
					A	B	C
1914	7.573.265	1.697.703	253.467	9.526.435	79,53	17,82	2,65
1915	8.676.900	1.762.975	272.620	10.711.595	81,	16,46	2,54
1916	9.249.647	1.829.096	295.495	11.374.238	81,32	16,08	2,60
1917	10.056.569	1.982.559	336.372	12.375.500	81,26	16,02	2,72
1918	10.765.171	2.253.720	428.712	13.447.603	80,05	16,76	3,19

Average amount of deposits per savingsbankbook.

End of year	Europeans	Natives	Foreign Orientals	Total
1914	f 148,59	f 26,06	f 40,13	f 77,81
1915	.. 161,35	.. 25,07	.. 39,66	.. 81,82
1916	.. 162,95	.. 23,89	.. 38,61	.. 80,69
1917	.. 166,76	.. 23,63	.. 39,32	.. 80,99
1918	.. 167,62	.. 24,34	.. 44,59	.. 80,80

Year	Investments in guilders	Repayments in guilders	Or in proportion repaid
1914	7.532.986	8.531.510	113.26 %
1915	7.524.941	6.629.712	87.40 ..
1916	7.983.823	7.564.992	94.75 ..
1917	8.467.929	7.725.740	91.25 ..
1918	9.258.246	8.463.924	91.42 ..

Popular Credit Institutions.

The organization of the popular credit system by the activity of the Government dates from 1900.

Some forms of co-operation have existed for many years in the Colony, sometimes entirely on the initiative of the people themselves, sometimes as a result of the encouragement of European officials. Already in the beginning of the 19th century the Government encouraged the storing of rice in the villages, both to lessen want and to procure seed paddy.

The popular credit system now in vogue was founded on the principle of some already existing institutions, and comprises at present three kinds of credit and savings banks:

1. the village rice credit banks (desaloemboengs).
2. the village money credit banks (desabanken).
3. the provincial, divisional or district banks.

The village rice credit banks.

These institutions, established by one or more communities, are owned by the Native community and were for the most part founded at the expense of the farmers. The Head of the Provincial Government draws up the regulations for the establishment and management. The contributions toward the founding come from members of the community in the form of natura, labour and money. As soon as possible the contributions are returned from the profits made. For the most part this has already been done. In cases where the means of the inhabitants were insufficient, the Government, in exceptional cases, advanced free of interest loans of rice or even of money for the purchase of building materials.

The rice lent out by the banks is paid back in natura with an addition of 50 % by way of interest, which is reduced as soon as the debts contracted by the bank have been paid off, the stock of rice brought to its proper level and a reserve fund formed. In most of the banks the rate of interest is already reduced. A part of the rice is sold each year, if necessary, to meet the expenses of administration from the proceeds; besides, by the sale of superfluous rice, after the debts are paid off, a reserve fund is formed which is invested in the popular or division bank. By this means the Native community comes into possession of a building free from debt, with a stock of rice and a reserve fund in money, and the farming population may obtain, against a moderate interest, rice for its sustenance and for other needs.

The directors, who enjoy a part of the profits, consist of three farmers and the village chief, while for the bookkeeping as a rule a competent person is appointed for several villages together, each of which he visits in turn.

The institution largely prevents the buying up of the harvest by dealers, with the consequent decrease of prices before and increase after the purchase, and keeps the price constant.

Only in those places where rice growing is the chief means of livelihood are these institutions necessary. If the people, however, have other sources of income from trade, industry or fishery, the storage of rice is less urgent. The improvement in transport facilities also lessens the need for padi-credit, because in times of rice shortage or crop failure the import from other parts of the country can be effected more easily than before. The number of rice storehouses is therefore decreasing and financial credit banks are taking their place.

In the Outlying Possessions, at the present time, with a very few exceptions, no more desaloemboengs are to be found.

Village Financial Credit Institutions.

These savings and credit institutions are established for the use of one or more villages and are run on the same lines as the rice credit

institutions. The working capital is composed of the deposits made by inhabitants who are interested in the concern, advances from the desa-loemboeng funds, other desa capital or loans from the Divisional Banks. In several banks the borrowers are required to pay a certain sum in addition to the loan plus the interest, which sum is booked as their deposit and is only repaid under certain conditions.

Since only small amounts are borrowed, generally not more than f 10.—, the high rate interest, of from 24 to 30⁰/₀ per annum, is in reality not excessive.

Although legally a community institution, the bank sometimes has the character of a co-operative society. Most of these banks have a current account with the divisional or residency banks for the purpose of borrowing working capital or the depositing of superfluous cash.

Although the turnover of the village banks is at present still small, there is reason to believe that gradually they will become the main credit banks of the small farmer, trader and manufacturer.

District, divisional or provincial banks.

The working area of these banks, intended for Natives and non-Natives, in Java usually covers a political division, in the Outlying Possessions often a whole province with a population of from 250,000 to 1,000,000 inhabitants, while many of the banks have branch offices.

The institution is an incorporated society, managed by official and unofficial Europeans and Natives of good social standing.

Profit making for the benefit of the directors is excluded, the management gives its services free of charge; the bank is conducted, however, according to the strictest business principles.

The intention is gradually to do away with the official element and to draw the depositors and borrowers into active service.

The work of administration is in the hands of a manager who is assisted by a staff of Europeans and Natives.

As long as it is necessary, the Government supports the banks with subsidies for the costs of administration.

Originally money was furnished by the Government for working capital. Since the establishing of the „Central Cash” on the 1st of January, 1913, these subsidies have ceased with the exception of amounts which, through the medium of the banks, are supplied by the Government for measures of an economical nature, to which extraordinary risk is attached and for which the Central Cash has no money available, e.g. for improving the stock of cattle by the importation of foreign cattle, for aid to districts stricken by fire or earthquake, etc.

With a few exceptions, these banks have no capital of their own outside of the reserves formed. They are therefore extremely eager to acquire an ample reserve as soon as possible.

The working capital, so far as it is not owned by the bank, consists of deposits by private individuals, Native communities and local unions and money borrowed from the Central Cash.

The deposits consist of:

- a. Deposits repayable at 3 to 12 months notice and which bear from 4 to 6⁰/₀ interest per annum, mostly from Europeans.
- b. Savings, withdrawable without notice, bearing from 3 to 4⁰/₀ interest p.a.
- c. Compulsory deposits bearing from 3 to 6⁰/₀ interest p.a., sums which borrowers are obliged to deposit and which are only refunded in cases of extreme necessity.
- d. Sums in current account from village banks, Native corporations and public institutions, bearing from 2 to 4⁰/₀ interest p.a.
- e. Sums in current account lent by the Central Cash at a rate of interest which has to be fixed annually.

The money is chiefly lent for productive purposes, for agriculture, trade, fishery, the redemption of mortgaged land and crops, the building of houses and, to a limited extent, for non-productive purposes.

The rate of interest charged by the bank varies from 12 to 24⁰/₀ p.a.

In order to enable the peoples' banks to enforce their claims they are empowered by law to get a lien on immovables which are held in possession according to the Native law. Such a lien partakes of the nature of a deed of mortgage and is called a credit lien.

The advantage of this lien is that it leaves the debtor the usufruct of his possessions and prevents his impoverishment. An actual contract cannot be made with the divisional banks, these being at law considered as European persons, and according to Dutch East Indian Law no European can lay claim to lands owned by Natives.

The mortgaging of land which has been hypothecated by such a lien is illegal and void.

In 1919 there were found divisional banks in all the divisions of the Government land in Java except in one, besides in Soerakarta.

In the Outlying Possessions they are not yet so numerous.

In some provinces of these Possessions the credit system has developed along different lines, since decentralization has been introduced and the active co-operation of the Natives is greater.

In some parts of Java, where sea fishery is the source of livelihood, credit banks have been established in behalf of the people, in connection with which a co-operative fish market is run. These institutions have prospered, so that many more are being established.

The stagnation in various popular industries, especially in the batik line, and the lowering of prices of most export products subjected the divisional banks to many difficulties, which increased, particularly in the last years of the war. Restriction of business was a necessary consequence.

The Central Cash for Popular Credit.

This institution, incorporated and established at Batavia, is capitalized by the Government, whose plan it is to increase the original capital till it reaches the sum of / 5.000.000.

This bank serves a twofold purpose, i.e. it provides the peoples-banks with working capital and an opportunity for investing their funds and it advises and assists in their management.

The Government has furthermore through this institution a means to control the credit banks.

The management consists of an official as Director and a Board of Supervision appointed by the Governor General. The staff consists of civil servants whose salaries are paid by the institution.

The Central Cash provides the peoples-banks with auditors, for whose services a certain fee is charged. It gives credit only to well managed institutions and is a guarantee for the repayment of deposits.

The Governor General may entrust the Central Cash with the bookkeeping and administration of funds which have been placed at disposal for the promotion of the people's welfare.

At the end of the year 1918 the capital of the Central Cash amounted to / 2.875.250, while the interest to be paid to the Government for 1919 was fixed at 4.56⁰/₀.

Up to the end of 1918 the Central Cash had granted credits to 67 Divisional banks to the amount of / 4.881.000. Continuous reduction of its stock account during the years of the war, to a total amount of / 388.287 cost the Central Cash a balance loss of / 134.365.

Divisional Banks.

End of book-year	Number			Working capital	Net capital	Balance of outstanding loans	Monies withdrawn	
	Java	Outlying Possessions	Total				Immediately withdrawable	With term of withdrawal
1911 70	3	75		9.992.000	942.000	8.110.000	1.743.000	7.622.000
1914 73	7	80		19.585.000	2.207.000	16.367.000	6.472.000	11.545.000
1918 70	13	83		32.362.000	4.140.000	25.216.000	12.458.000	17.590.000

Village Banks.

Ult. Dec.	Number			Amount of outstanding loans	Deposits of Natives	Net capital
	Java	Outlying Posses- sions	Total			
1911	904	2	906	f 603.000	f 200.000	f 201.000
1914	1.676	555	2.205	„ 1.278.000	„ 577.000	„ 702.000
1918	2.057	777	2.814	„ 1.717.177	„ 826.943	„ 1.745.806

Rice-Banks.

Ult. bookyear	Number			Net Capital	
	Java	Outlying Posses- sions	Total	In rice (KG)	In money (Glds)
1911	12.650	80	12.710	146.618.240	528.000
1914	12.206	295	12.504	158.552.640	5.654.000
1918	10.585	—	10.585	167.122.560	5.521.000

The Monetary System.

The need of currency is provided for by coins, minted according to the Coinage Act of the Dutch East-Indies, dated October 31st, 1912, (D.E.I. „Staatsblad” 1912, No. 610), by bank notes, issued by the bank of circulation of the D.E.I., the Java Bank, according to its charter (Octrooi), and since August 1919, by bills, issued by ordinance of July 18th, 1919, (D.E.I. „Staatsblad” No. 408), because of the shortage of standard silver coins.

The monetary system is based on the gold standard, i.e., all coins in the Dutch East-Indies, whether silver, nickel or copper, have a relative value to the standard gold coin, this value being fixed by law.

The Colony has no mint of its own; the necessary coins are struck by the State Mint at Utrecht.

The monetary system in the Netherlands is uniform with that of the Dutch East-Indies.

Both systems have the same standard gold and silver coins, which are legal tender to any amount.

In order to understand clearly the nature of the monetary system in the Dutch East-Indies it is necessary to refer to the Dutch Coinage Act of 1901, which has been revised and amended several times, the last time by the Act of October 31st, 1912. The text of the Act is again published in the D.E.I. „Staatsblad” 1912, No. 611. In this Act the value of the guilder is fixed at a tenth part of the golden ten guilder piece.

The golden ten guilder piece contains 6.048 grams of pure gold, the silver guilder 9.45 grams of pure silver, so that the relative value of gold to silver is as 6.048 : 94.500 or as 1 : 15.625. A bill is being considered, however, for lowering the silver percentage of the rough silver coin.

The minting of gold is free, while silver money may be minted only by the Government, and then under certain limitations, so that only as much silver may be minted as is necessary for circulation in Holland and its Colonies.

The Dutch and Indian Coinage Acts, therefore, permit only the minting of $2\frac{1}{2}$ guilders, guilders and $\frac{1}{2}$ guilder pieces for the purpose of replacing the Dutch or Dutch East Indian coins which have been withdrawn from circulation by the Government, while for the minting may be used only the silver of the coins withdrawn.

The Crown has the right to permit departure from prohibiting the minting of $2\frac{1}{2}$ guilders, guilders, half guilders and silver small change other than from the silver melted from Dutch East Indian coins, whenever the needs of the currency in Holland and the Dutch East-Indies make such a step desirable. The sums required for the purchase of silver must be entered separately in the budgets of Holland and the Dutch East-Indies, and must be fixed by law.

To maintain the gold value of the silver coin, certain provisions have been made. If it appears that so much silver is in circulation that there is danger of the value of the gold decreasing, the Minister of Finance is empowered to melt into bars an amount up to 25.000.000 guilders in Dutch $2\frac{1}{2}$ guilder pieces and to sell these bars through the agency of the Netherlands Bank. In order to cover the loss caused by the withdrawing of silver coin from circulation, the profits arising from the minting of pure silver have since 1913 been administrated as a separate fund, the interest of which is added continuously to the capital.

In its endeavour to maintain the specie-parity of its currency on foreign markets, the Government is assisted by the Netherlands Bank. This bank pledged itself in 1904 to hold ready for export its entire stock of gold at a price which would prevent any possible rising of the exchange beyond the gold point.

The Directors of the Netherlands Bank at that time assumed the following obligations toward the State:

„The Directors of the Netherlands Bank bind themselves toward „the Government to maintain the gold policy hitherto pursued by them „by offering for sale fine bar gold at the price of $\text{f} 1.653,44$ per Kg., and „minted gold at a corresponding price, as soon as the exchange rates on „foreign markets rise beyond gold point, and to continue to do so as long „as its stock of gold will permit”.

This is in force only during normal times and not for the extraordinary circumstances created by the world war.

The policy of the Netherlands Bank with regard to Holland is followed by the Java Bank with regard to the Dutch East-Indies, although in a somewhat different manner.

At the end of December in the years indicated below, the following (estimated) amounts of legal tender were circulated in the Dutch East-Indies.

	Silver	Nickel	Copper	Banknotes
1909	$\text{f} 581.000.000$	—	$\text{f} 11.000.000$	$\text{f} 79.000.000$
1910	„ 585.000.000	—	„ 11.000.000	„ 89.000.000
1911	„ 587.000.000	—	„ 11.000.000	„ 100.000.000
1912	„ 397.000.000	—	„ 11.000.000	„ 112.000.000
1913	„ 414.000.000	—	„ 11.000.000	„ 110.000.000
1914	„ 419.000.000	$\text{f} 1.000.000$	„ 12.000.000	„ 131.000.000
1915	„ 422.000.000	„ 1.500.000	„ 12.000.000	„ 136.000.000
1916	„ 423.000.000	„ 2.000.000	„ 13.000.000	„ 156.000.000
1917	„ 427.000.000	„ 2.500.000	„ 13.000.000	„ 168.000.000
1918	„ 430.000.000	„ 3.000.000	„ 13.000.000	„ 197.000.000



EDUCATION

Education

Instruction in Handicrafts for Natives



CHAPTER V.

Education.

In the Dutch East-Indies the problem of education presents an extremely difficult task to the Government.

On the one side a population of millions wherein, since the general uplift of the oriental nations, an ever increasing demand for education may be noticed, and which claims for a steadily increasing number of its children an opportunity to attain the same intellectual height as the Westerner, without, however, being able itself to produce sufficient material means and intellectual forces to meet its needs.

On the other side a European and Chinese colonial population of considerably higher development, which also demands complete satisfaction for its educational needs but which, on account of its small numbers, as well as for other reasons, is just as little able to provide the necessary teaching staff by itself.

Added to this, the difficulties of engaging a sufficient number of instructors from Holland, the intricate problem of projecting a homogeneous and practical system of instruction adapted to the diverse requirements of the various groups of people and the obtaining of financial means, with the country's continually increasing expenditures for other needs which are equally pressing.

The Government is giving to this particularly important part of her task the attention and the care which it demands. To facilitate the review, the educational system now in use is pictured in a graphical way. There is, as the chart plainly shows, a group of schools for primary and secondary education especially for the Natives, and another group especially for the European part of the population, while for the children of all nationalities a group of institutions for secondary instruction in trades and general branches forms a link between the two. It is deserving of mention that schools for specific European instruction are not closed to pupils of non-European nationality. These schools are open to all children who

are able to follow the given course successfully. It is especially required that these pupils have a sufficient knowledge of the Dutch language.

As yet there are no institutions for higher instruction in Netherlands India, but preparations for the founding of a Technical University in 1920, primarily for the training of Civil Engineers only, are already far advanced. As indicated by the chart the instruction at most of the secondary schools is a preparation for further study in the universities of Holland.

A diploma from the Indian law and medical schools makes the student exempt from a faculty examination in the universities. For Indian veterinary surgeons a similar regulation is being put into effect.

By means of scholarships and also by an allowance to cover tuition expenses, gifted but impecunious young men of India are given an opportunity by the Government to continue their studies in a university in Holland.

The expenditure for education in 1914 totalled about 15 million guilders, of which 6.25 million for the European and 6.75 million for Native instruction, for 1919 the total expenditure is estimated at 20 million guilders, of which about 7.50 million for European and about 12.50 million for Native instruction.

A closer survey of the principal forms of educational institutions separately may now follow.

1. Instruction for Europeans.

Instruction for the European part of the population is so arranged that transfer from a school in the Colonies to an institution of similar rank in the Mother Country can be effected without difficulty.

By establishing schools where opportunity exists for obtaining qualifications which formerly could only be obtained in Holland, the permanently settled part of the population has been enabled to acquire training in various lines which enables them to find employment in the Colonies in the branches of commerce, industry, agriculture, etc.

Instruction on a Western basis is given in Netherlands India in three periods, namely, that of the so-called primary instruction, the more extensive primary instruction (Mulo) and the secondary (middelbaar) and intermediary (voorbereidend hooger onderwijs), which is preparatory for a higher instruction.

The first elementary or so-called Fröbel instruction is not yet given by the Government, but to several primary schools are connected one or more kindergarten classes chiefly for the benefit of children who are not yet sufficiently acquainted with the Dutch language to follow the

primary instruction successfully. It is the intention, in due time, to replace these kindergarten departments with classes for real, preparatory primary instruction (Fröbel classes) for which the necessary teachers are already being trained in a special normal school, established in 1919.

Besides this preliminary class, the European primary school has a seven year course.

After having completed this course, the pupils who are considered qualified for more advanced instruction may be admitted without examination to what will hereafter be mentioned as the „Mulo” divisions of the General Secondary School (Algemeene middelbare School), or an entrance examination may be taken for one of the secondary or technical schools, which examination is given once a year. There is also another examination open to the pupils of the elementary school, the so-called „Klein Ambtenaars-examen” which is given once or twice a year, according to need, in a great many places throughout the Dutch East-Indies, and which gives opportunity to obtain the diploma required for a position in various branches of the Government service. From graduates with this diploma are also recruited the minor office clerks.

It is accepted as a rule that no school shall be opened or held in Java and Madura unless the number of European pupils is at least twenty and in the Outlying Possessions at least fifteen. The schools are divided into co-educational and girls' schools. Where local conditions make it desirable, special schools may be established exclusively for paying pupils. Such institutions are called "eerste scholen". In all these instruction is given in French. Some knowledge of French is required for admission to all secondary schools, except those which give a professional training only.

In view of this requirement, several other institutions and a few Dutch-Chinese schools give an afternoon course in French. Courses in English and needlework are also given in some schools.

In the larger towns, where the number of girl pupils amounts to at least sixty, special schools for girls have been established where, apart from the ordinary subjects, needlework is taught. In two of these schools a course in domestic science is given.

European schools are open to non-European pupils whose parents, among other things, comply with certain social and financial requirements.

Nearly all schools have a children's library.

The need for continued and extended primary instruction is supplied by schools with a more advanced lower grade, the so-called „Mulo” divisions of the General Secondary Schools, which have a three years' course. Among the subjects taught are French (optional) and English, while instruction can also be had in one or more of the Native languages.

The primary instruction is given by diplomad teachers, both male and female, who have either been trained in Holland and sent out to the Indian

service, or have received their training and appointment in the Colonies.

Next to several private training schools and courses, the Government conducts establishments where an assistant's certificate (*hulpakte*) may be obtained. There are also four normal schools with a course leading up to a chief certificate (*hoofdakte*), in which the students are for the most part active teachers in the public and private schools.

The assistant's and chief diplomas are equal with those obtained in Holland.

In 1917 there were 198 European primary schools with a total of 26,817 pupils (among which 5,852 children of Natives and Foreign Orientals), 31 Dutch-Chinese schools with 6,717 pupils and 14 schools with a more extensive primary instruction with 1,615 pupils, a total of 35,149, of whom 8,239 are instructed free of charge.

In the same year there were in India 50 private primary schools, of which 38 were subsidized by the Government, with a total of 8,141 pupils.

In the Government institutions 1,088, in the private institutions 301 teachers were employed.

The expenditure for primary instruction in 1917 amounted to f 8.231.408. of which f 891.522 in subsidies. In tuition was received f 1.100.174.

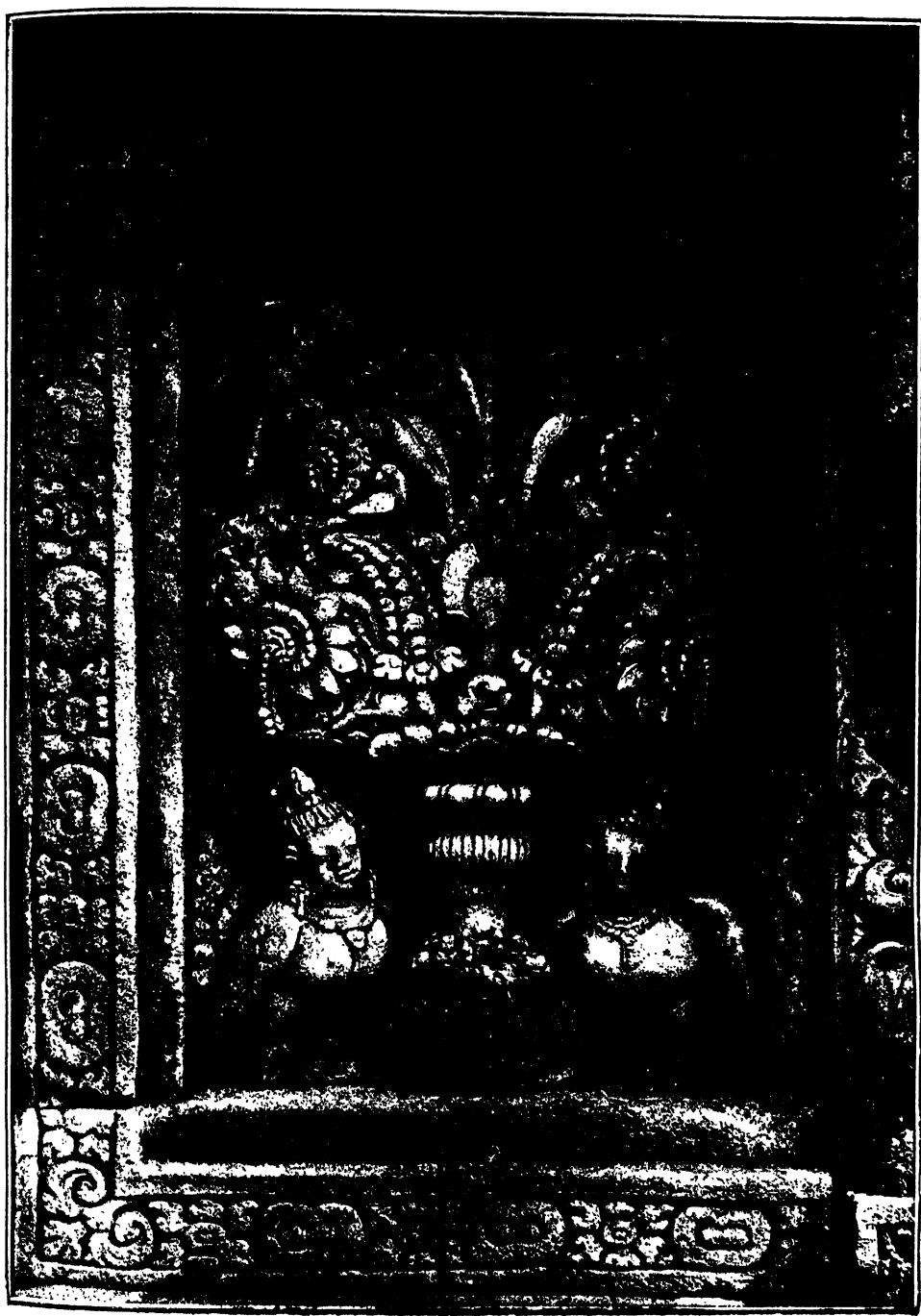
Secondary Schools.

These are divided into trade schools and schools for general education. For the needs of the latter the Government provides Secondary Schools (*Hoogere Burgerscholen*) with a 5 years' course, 1 High School with a three years' course — which are on the same basis as institutions of similar name in Holland — and 1 school, founded in 1919, with a three years' course in preparatory Higher Instruction (mathematics and physics) — the so-called „*voorbereidend Hooger Onderwijs*” — with the Mulo as foundation.

The final diploma from the five-years' secondary School and that from the last named institution have the same value as a final diploma from a Holland Secondary School with a five years' course.

Besides the above named secondary schools, there are various technical institutions where students are trained for commerce, navigation, mining and building trades. In 1914 a three years' business course was established in Sourabaya, where to each of the three forms eight lectures a week are given on the Dutch and English languages and business correspondence besides on book-keeping, business arithmetic and commercial law.

The schools are open to pupils of every nationality, providing they have passed the entrance examination; the technical only for boys, the rest are co-educational. Free admission and equipment in books, etc. is available for impecunious students, who are chosen for their good conduct, natural aptitude and industry.



Boeroborver. Relief

The Government supports a school of handicrafts for impecunious students where instruction is given in carpentry and metal working.

There is also one private Technical School, subsidized by the Government, where architecture and mechanics are taught.

Exclusively for girls there are four private secondary schools with a three years' course, three of which are in Batavia and one in Sourabaya, wherein, among others, are courses leading up to a teacher's examination.

The costs of the Secondary and Technical School in 1917 amounted to f 1,161,116 (including f 82,800. in subsidies to private institutions, the cost of buildings). In tuition f 200,913 was collected.

11. *Instruction for natives.*

This instruction must supply the need of the Native child who contents himself with the humble handicraft of the mass as well as the longing of a constantly increasing number of the people for instruction along European lines particularly in the acquisition of the Dutch language. Till a few years ago only the Native children from the higher classes came into consideration for such instruction.

In connection with this increasing desire for western development it has been decided to considerably revise and extend the primary instruction for Natives, and this change has already partly been effected.

The changing of the Native elementary schools, where only languages of the country were taught, into so-called Holland-Native schools, where Dutch is the principal language, has been one of the measures for reform.

Besides to elementary instruction for Natives, due attention is being paid to trade instruction, and the number of Native advanced and professional institutions is steadily increasing.

In 1909 a Native law school was opened, in 1913 a second school for the training of Native doctors and in 1917 a second agricultural school (*cultuurschool*). Previous to 1909, there were already established a secondary school for agriculture, for veterinary surgery and schools for handicrafts.

Instruction for the Chinese population has also demanded attention. This instruction is provided by the founding of primary schools along European lines, the so-called Dutch-Chinese schools, while for the training of Chinese instructors for these institutions a separate normal school is established.

Besides establishing schools of its own, the Dutch East-Indian Government promotes education by subsidizing private institutions, of which sectarian and non-denominational schools of any nationality may take advantage.

Native School of the 2nd class and Native Instruction for the people (Volksonderwijs).

Before the founding of the Native schools for the people, which will be mentioned later, the instruction given in the so-called schools of the 2nd class was most elementary. Since the Native schools for the people are established and providing for this need, the Secondary schools are intended for those places where the people have reached the point at which they require a more advanced instruction than is given in the people's schools. For the pupils of the public schools who want more advanced instruction, so-called „continuation” schools (vervolgsscholen) are established.

These schools have the same program as the schools of the 2nd class, in this way, that the instruction in the first grade of the continuation schools agrees with that of the third grade in the secondary schools.

The instruction in the 2nd class schools includes the reading and writing of the language of the country or Malay in Arabic or Latin characters, and the chief principles of arithmetic. With permission, other subjects may be taught, among which however, Dutch is not included.

The schools have at least three classes; in almost all schools in Java a fourth grade is added, while a great number have even a fifth grade.

Native public Instruction.

For the great masses of the Native population a few years ago public schools were established. The founding of these schools is entirely leaved to the initiative of the people themselves. In cases where the communities cannot bear the entire expense they receive subsidies from the Government.

The instruction is, of course, quite simple, since it must meet the daily needs of the people. It is given in a three year course and includes reading and writing in the language of the country in the original and in Latin characters, and arithmetic. A little natural science is taught, as far as it can be applied in the pupil's daily life, while the endeavour is to make the instruction as much as possible a means for disseminating a better knowledge regarding Native agriculture and the obtaining of more attention for it.

The requirements for the teachers are not high, being limited to the successful completion of the training in a Native 2nd class school and a year's practical and theoretical preparation under supervision of a Native instructor in one of the Government schools.

The salary is paid from the school fees which amount to five or ten cents per pupil per month. Sometimes it consists of the revenue from a piece of land, or the school fees are paid in rice.

In the larger schools two teachers are sometimes employed. Besides subsidies the Government provides free books and other equipment.

The people themselves make and furnish the school house, for which the Government provides the necessary wood.

Public instruction is under the control of the Director of Education and Religion.

Not only in Java but also in the Outlying Possessions the number of people's schools is constantly increasing. The establishing of these schools in the Outlying Possessions dates from 1912. There were, to be sure, before this time similar institutions founded by Native communities upon the initiative of Government officials and for the most part subsidized. In 1913 they were taken over and classed among the people's schools, to which by nature they belonged.

Dutch-Native Schools.

These schools are intended for children of non-European nationality. A European instructor is at the head of these schools.

They are organized along the lines of the European primary schools and prepare the student for continued instruction in the normal and training schools, the Mulo divisions of the General Secondary School and the technical schools. Instruction is given, also, in the language of the country and in Malay.

In these schools, which have a seven years' course, an afternoon class is conducted for instruction in the Dutch language, so as to fit the pupil for entrance into the Mulo divisions of the General Secondary schools.

Special Schools.

A few Native schools have been established which must provide for special needs. European teachers are in charge and the subjects taught are almost the same as in the European primary schools. They are divided into two categories, schools for Christian Natives and those for Natives of high degree. The former are to be found in districts where the population is for the most part Christian, while to this category belong also the six schools for children of Native soldiers of the Christian faith.

In the Outlying Possessions are a few so-called special schools for Natives of high degree, of which some are open to European children whose parents cannot provide instruction in any other way.

In 1917 there were 115 Dutch-Native schools with a total of 21,690 pupils, 989 Native schools of the 2nd class in Java and 490 of the same class in the Outlying Possessions, with 142,415 and 72,875 pupils, respectively, 14 special schools with 3,132 pupils; in Java and Madura 4,185 and in the Outlying Possessions 1,372 people's schools with respectively 299,516 and 83,127 pupils, besides 2506 private school for Natives, 220 for Chinese and 32 for Arabs, with respectively 145,505, 12,636 and 1,928 pupils.

The costs of the Native primary instruction in that year amounted to f 7.136.708, of which f 656.704 in subsidies. In tuition was received f 495.947 and from the sale of books, f 54.840.—.

Advanced Schools for Natives.

The continued and professional education of Natives is gradually being extended in various directions. Next to the Normal Schools for Native teachers, the training schools for Native officials are the oldest institutions in the Colony. Here are trained those Native young men who wish to be considered for a future position with the Native civil service.

These training schools, which dove-tail into the sixth class of a Dutch-Native school and to the fifth class of an European primary school, have a seven year course, of which five years are devoted to general education, while in the last two, subjects are studied which have a direct bearing on the student's after life. Among these subjects are: the elements of jurisprudence, the state and administration laws of the Dutch East-Indies, the principles of political economy, adapted to Dutch East-Indian conditions, the principles of agriculture and rural economy, surveying, nivellating and book-keeping by simple entry. Dutch is the teaching medium, while instruction in Malay and the Native language (or languages) of the country is also given.

Boarding establishments are run in connection with these schools, while the charge for tuition is according to the means of the parents.

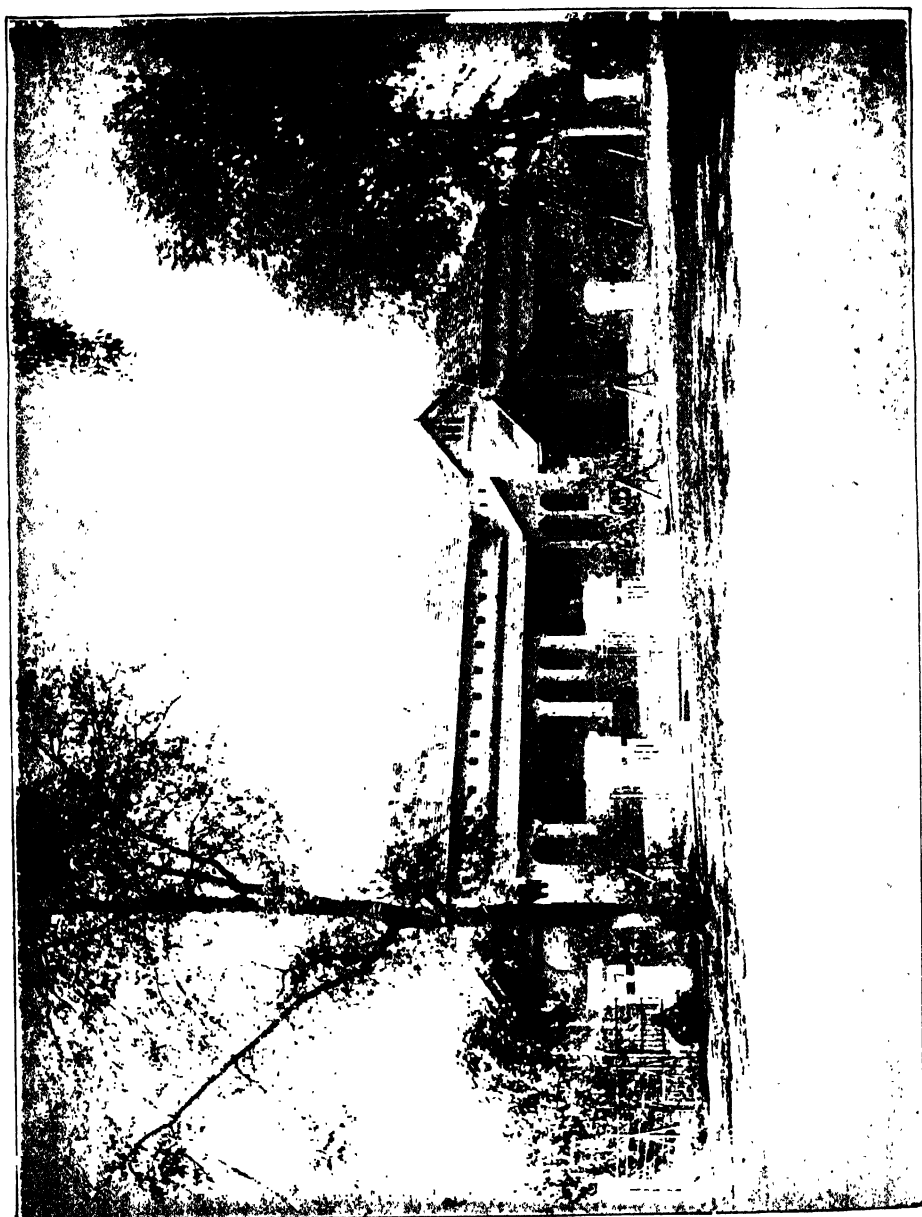
In 1918 a temporary course of instruction was opened for the training of a group of young men as Native civil servants in South Sumatra. The requirement for admission is that the candidate shall have completed successfully a course in a Native 2nd class school.

Training school for Native jurists.

This school was established in 1909 for the training of Native jurists who might be able to qualify as judges for the Native population. In adopting this measure, the main idea was that a part of the jurisdiction should be entrusted to Native judges, who naturally are in closer touch with the population, and better acquainted with its nature, customs and language than are the European judges who up to this time had presided over all the Native courts.

The training is given in a six year course, of which three are devoted to general education and three to the study of the various branches of the law.

Not only scientific training but also moral education and the forming of character are given the necessary attention. For this purpose a boarding establishment is run in connection with the school, where proper supervision can be exercised over the pupils, and where justice can be done to their ethical training.



The school is open only to pupils from good families, who have completed a course in a European elementary school.

After having passed the final examination successfully, the Native lawyers can be placed at the disposal of presidents of the Country Council, so that they may become acquainted with the practice of legal administration. They may then be appointed as assistant-recorders, while the positions of recorder, vice president, president and member of the Country Council (*landraad*) are open to them, besides that of fiscal recorder at the country courts (*landgerechten*).

The Native jurists may continue their studies in one of the Universities in Holland, if they so desire, where they may obtain the same academic degree-titles as the other law students of these Universities.

On the ground of their training in India, they may be partly exempt from examinations.

Training Schools for Native Instructors.

There are eight of these institutions, of which five are in Java and three in the Outlying Possessions. There are also in Java two private training schools (*Kweekschool*) the final diploma of which has the same value as that from the Government normal schools.

In 1918, a training school for Native women teachers was established in Java.

The training schools have a five year course. The Dutch language is used as a teaching medium.

The students have free lodgings and a monthly allowance for food, also free books and medical treatment. For practical experience an elementary Dutch-Native school is attached to each normal school.

For those who wish to become instructors in a Dutch-Native school, an advanced training school for Native teachers was established in 1914, where after a three years' course they may obtain the desired qualification.

For the training of teachers for the Native schools of the 2nd class has been since 1915 normal schools (*normaalscholen*) for Native assistant teachers, at the head of which is a European instructor, while training is also given by Native teachers. These schools provide a four year course. Boarding establishments are run in connection with them. The language of the country is the teaching medium; Dutch is not among the subjects taught. The students enjoy the same advantages as do those of the training schools. They receive their practical training in a second class school.

There are now twelve normal schools, of which nine are in Java besides one private, the diploma of which is equal with that of the others.

There are also four Government normal schools and one private normal schools and one private normal school for Native assistant woman teachers, of which one is in the Outlying Possessions. In the private institution and in two of the Government schools Dutch is taught.

In 1917 the Native law school had an attendance of 65 pupils, the training schools for Native civil servants, 922, the Government training schools for Native teachers, 716 and the private training school, 19.

Instruction in Handicrafts for Natives.

As European civilization penetrates more and more into these colonies the demand for well trained craftsmen is becoming ever greater. For a great part this demand is supplied by the Chinese, who form an industrious class of trade workers. But for the Native population, also, this need for efficient craftsmen opens up a wide field for economical development.

To lead the Native in this direction and to give them an opportunity to learn those handicrafts demanded by a society built up on European lines and which assure the workman an ample means of living, the Government established the first trade schools about ten years ago. It is true that private persons, chiefly the missionaries, who received financial support from the Government, had already made an attempt to promote trade instruction, but the influence exerted by these institutions has proved to be so small that they must be considered only as training schools for instructors necessary for the service of the mission-work.

In the three most important towns of Java the Government established three large trade schools for Natives at the end of the year 1909. All these schools have a department for carpentry and one for iron craft, and each one is designed for two hundred pupils. Since a few months ago, in the trade school in Batavia, there has also been a course for chauffeurs. Each department is in charge of an European expert who is assisted by Native instructors.

The training, which is an extension of the instruction in the Native school of the second class, and in which Malay is the teaching medium, is given in a three years' course. Lessons are given in carpentry, bench work and forging, also mechanical drawing, while some time is devoted to acquiring a more general education.

A small tuition fee is charged, from which indigent and moderately poor students may be entirely or partly exempted.

The pupils who graduate from these schools find profitable employment in Government institutions, with European industrial concerns or in repair shops, while many find a position as draughtsmen or mandorins. They do not open workshops of their own, however.

At present these schools are attended by 277 pupils for woodcraft and 307 for ironcraft, in all 584 pupils. At the end of the school-year 1918-1919, 53 diplomas were presented for woodcraft and 43 for ironcraft.

Native handicrafts, particularly in the villages, are not influenced nor improved by these schools.

For this reason it was decided, some years ago, to establish more simple Native trade schools at central points where a trade industry already existed, the object being to produce a class of locally trained workmen who, on account of their superior knowledge, might find profitable employment with estates and enterprises in the environments, and so remain in their own district. It is hoped that when their large earnings have given them some capital for investment, they will open shops of their own.

In 1915 three of these schools were opened (at Keboemen, Fort de Kock and Koeta Radja). This year the number has been increased by two (at Djokdjakarta and Tasikmalaja) while four more are in the course of construction. It is the intention to add three more every year.

In these schools, for the present, only one trade is taught, with the exception of the school in Djokjakarta, which is equipped for teaching both wood- and metalcrafts.

For these schools, also, the requirement for admission is the completion of a course in a Native school of the second class. Here, also, the students pay a small fee, while they contribute monthly to a school savings fund, out of which are paid the cost of a simple set of tools which are presented to every pupil who graduates from the school.

The instruction, in which Malay or the language of the country is used, is given in a two years' course and includes the trade with mechanical drawing and trade calculation as assistant subjects.

In charge of each school is a European craftsman, who is assisted by Native instructors.

At present there are five active trade schools for Natives, with a two years' course and a total attendance for 316 pupils.



HEALTH REGULATIONS

The Civil Medical Service



CHAPTER VI.

Health Regulations. Civil Medical Service.

The task of the Civil Medical Service may be divided into:

- I. *The exercise of Government medical supervision*, which in a general sense includes the investigation of the state of health of the population, together with the planning and carrying out means for its improvement.
- II. *The establishing and maintaining of individual treatment* of the sick, including:
 - a. The promotion of effective European methods for treatment of the sick among the population.
 - b. The providing of medical care for certain groups of people.
- I. *The exercise of medical supervision by the Government* is mainly concerned with the combating of epidemics in general and of contagious diseases in particular.

This campaign is conducted by a central medical service under the direction of a Head Inspector.

The Head Inspector is assisted by Inspectors of whom there are three in Java and Madura (including Bali and Lombok) with Western Java (headquarters Batavia), Central Java (headquarters Semarang) and East-Java (headquarters Sourabaya) respectively, as their fields of activity, while for a part of the Outlying Possessions one Inspector is appointed, and in the remaining part the provincial Chief military surgeons act as officiating Inspectors.

The Inspectors have at their disposal Government medical men serving under them: Europeans (i.e. those who have an M.D. from Holland, or a similar degree) and Indian (those who have had their training in a Dutch East-Indian medical school).

In an extensive island empire with an active and continuous shipping trade between the numerous ports, both large and small, the care against the spreading overseas of contagious diseases claims particular attention, since it is not possible to maintain in each of these harbors a completely equipped, medical quarantine service.

This defense against contagious diseases is carried on in the first line by Government physicians, who serve under the Inspector indicated as harbour doctors in ports which have been chosen as suitable for this purpose along the great routes of travel within the Archipelago. These ports are divided into different classes, according to whether they are more or less completely equipped with a quarantine station with appliances for rat-killing and for disinfecting. The harbour doctors, according to recognized law, exercise control over the health conditions of the ships which call at the port.

The spreading of contagious diseases to the interior generally happens by way of the great import harbours.

Experience has taught that cases which have escaped the notice of the quarantine service at first are the cause of local epidemics in these great cities, where they find opportunity to assume serious proportions and so spread to the interior.

In order, therefore, to establish a second line of defense against the importation of contagious diseases to the interior, special health services are established in the ports mentioned above.

The duties involved are:

- 1st to keep themselves informed as to the mortality among the local inhabitants, so as to be in position to stamp out threatening epidemics in the very first stages;
- 2nd to take care that sanitary conditions in above cities are improved to such a degree that the advent of a few cases of contagious disease need not lead to epidemics. In other words, it is their task to render these ports as immune as possible to the spreading of infection.

In the third line of defense the fight is waged against diseases brought into the interior. Here the Inspectors find their main field of activity.

Each Inspector has in his office a department where mortality statistics are kept. Here, so far as Java is concerned, the deathrate is recorded from areas which are considered as units (Java has 1500 of these so called sub-districts). Gradually these mortality statistics are being extended to the Outlying Possessions.

The deathrate is posted weekly in graphical lines, according to a simple method which requires no calculating.

As soon as there are sub-districts which show an increasing mortality, Government doctors are sent to them by the Inspector in charge.

These doctors must find out which villages were the cause of the increased mortality, must trace its causes and take measures to reduce the death rate.

The data collected by them during their investigation are worked out in the small laboratoria of the health services in the big seaport towns, also in the *Central Medical Laboratory* at Weltevreden, where furthermore



Public school at Sourabaya

is chiefly conducted the general research in connection with tropical hygiene and the treatment of tropical disease and where the general control over foodstuffs and table-luxuries is exercised.

At the head of this laboratory is a Director who is assisted by Government doctors.

An important link in the organisation for the fighting of general epidemics is also the „*Landskoepokinrichting en het Instituut Pasteur*” at Weltevreden.

This general vaccine- and serum institute, where hydrophobia, also, is treated according to Pasteur, is chiefly established as an active means of combating contagious diseases. Various vaccines and sera are prepared by this Institute. At the head of the establishment is a Director, while Government doctors are also connected with the staff.

The cholera vaccine has proved a very effective weapon for fighting against cholera epidemics which have already broken out among the people.

The Institute also prepares typhus vaccine, tetanus serum, dysentery serum etc.

The „*Landskoepokinrichting*” is the only establishment in the Dutch East-Indies where animal vaccine is prepared on a large scale. Opened in 1891 and considerably enlarged by rebuilding in 1908, the institution fulfills in all respects the highest requirement which may be exacted from it.

It prepares and distributes every week, over the entire Archipelago, sufficient vaccine to make immune the infants of the entire population, which numbers about 43.000.000 souls, besides for the necessary re-vaccination of the people.

For the production of vaccine young buffaloes are used, which besides supplying a large quantity (average 248,17 Gr. per animal) yield a vaccine which resists the heat of the tropics better than did the former cow-calf lymph.

In 1918 a total of 159.319 packages of vaccine was distributed, where-with 7.855.285 persons could be inoculated.

The result has since been attained that throughout the Dutch East-Indies animal lymph is used exclusively for vaccination.

The vaccinators receive, wherever possible, weekly a supply of vaccine sufficient for use in that time.

In the operation, the „*vaccinostyle individuel*” of Dr. Marechal is used, in which for every individual who is inoculated a fresh vaccination pin is used. After being used the pins are sterilized by the vaccinator himself in a simple pan made for that purpose, which is so constructed that the sterilized pins may be retained in it until the moment they are required again.

Vaccinations among the people are performed by Native vaccinators who are placed under the supervision of European or Indian doctors.

The supervision of the entire system is entrusted to the Chief Inspector of the Civil Medical Service, to whom the vaccine overseers regularly send in their reports. Formerly the vaccinators received their training from an older colleague, but now they must complete a course in the „Landskoepokinrichting” before they are considered for an appointment; while waiting for their appointment they act as assistants to a vaccinator.

Briefly summarized the staff which, under the control of the Civil Medical Service, is entrusted with the task of defending the people against contagious diseases, consists of the following:

- 4 Inspectors (and acting Inspectors),
- 1 Director of the Medical Laboratory,
- 1 Director of the „Landskoepokinrichting” and of the Institut Pasteur;
- all assisted by Government physicians.

To the *Government Medical Control* belongs, also, the maintenance of laws and ordinances passed in the interest of the public health, under which is included the control and supervision of the quality of medicines, foodstuffs and articles for consumption.

Besides being taken care of by the above mentioned Inspectors and acting Inspectors (with the Government physicians assigned to them) and partly also by the Director of the Medical Laboratory (see page 92) this sub-division of the Civil Medical Service employs a Civil Pharmaceutical Service under the supervision of a pharmaceutical Inspector.

The latter supervises the private and Government dispensaries of the Archipelago and controls the quality of the medicines offered for sale.

Furthermore he administrates the distribution of medicines and apparatus to the various Government hospitals and those subsidized by the State, while the examination of foodstuffs also comes under this Service.

II. *Individual treatment of patients.*

A. *The promotion of an effective treatment of patients among the people according to European methods.*

The Civil Medical Service strives to accomplish this purpose in three ways:

1. by creating and promoting individual initiative to the establishing and maintaining of private hospitals.

As a means hereto, a subsidy regulation is in force which allows a grant of three fourths of the costs for the erection and equipment of a hospital (including the cost of the land), while for the working expenses of the hospital (under which are included the upkeep of the buildings and of the equipment) an annual allowance is made, the amount of which depends upon the number of patients for which the hospital is intended.

Besides this allowance in money, the subsidized private Native hospitals receive on yearly application free medicines, instruments and dressing materials.

Furthermore, the Civil Medical Service tries, in places suitable for that purpose, to cooperate if possible with estate hospitals in the treatment of Government patients according to certain agreements, while, finally, by a separate subsidy regulation a grant from the Government is assured to local Councils for the building, equipment and working expenses of provincial and municipal hospitals.

Giving information and advice regarding the building of suitable hospitals, asylums and leprosy homes also belongs to the means by which an attempt is being made to have the sick cared for according to requirements.

2. by the establishment and maintenance of Government hospitals and the holding of polyclinics.

In places where provision for the needs of medical treatment can not be entrusted to individual initiative and also where the hospitals must serve for their own purpose as well as for other interests (among others, that of instruction) the Government has its Native hospitals and central municipal medical institutions.

The Native hospitals, at the head of which is a Government physician or a civil doctor, are mostly simple institutions in the smaller towns and are principally intended for the treatment of indigent Native patients.

The central municipal medical institutions are the big Government hospitals in the three chief towns, Batavia, Semarang and Sourabaya.

These well equipped hospitals, where paying as well as non paying patients are recieved, serve as training centres for the medical schools, so far as Batavia, and Sourabaya are concerned, while all three are used for the training of the nursing staff (see page 96).

At the head of each of these central hospitals is a Director, assisted by European and Indian Government physicians, besides the necessary European and Native orderlies and nurses.

Deserving of mention, also, is the Government ophthalmic hospital in Bandoeng, also in charge of a Director, which also serves as a training school for Indian practitioners wishing to specialize in eye diseases, which are very common in this country.

Besides in the hospitals the people have opportunity to obtain medical treatment in places designated for the holding of polyclinics.

3. by the training, according to Western ideas, of the medical and nursing staff, i. e. of *Indian physicians, Native nurses (male and female) and midwives.*

The training of Indian doctors takes place in two medical schools, one in Batavia and one in Soerabaya in charge of which are Directors assisted by the necessary instructors (medical and non medical teachers).

The medical schools are open to male and female pupils of every nationality. The pupils with a service bond, meaning those who have bound themselves to serve the Government a certain number of years after completing their studies, receive tuition and lodging free of charge, besides an allowance to cover the expenses of food and clothing.

The medical schools have a preparatory course of three and a medical course of seven years. Admission to the schools is granted after satisfactorily passing an entrance examination.

In the medical school at Sourabaya, which was established in 1913, the first class of the medical course commenced in 1916.

The training of *Native nurses* is done by physicians in charge of public or private civil hospitals suitable for this purpose.

The training in Java is principally carried on in the central municipal hospitals in the three chief cities, also by a few other hospitals, while recently young students from Sumatra are being trained in the industrial hospital at Sawah Loentoh.

In general young men from all parts of the Archipelago may become students in case they comply with the admission requirements among others those regarding their preliminary training.

The course lasts three years during which time the pupils receive a monthly allowance besides food and lodgings or their equivalent in money.

In connection with this instruction is the training of laboratory assistants, of mantris for the polyclinics and for the public health and of *midwives*.

Mention should also be made here of training of pharmacy assistants, of analyzers and of public health supervisors.

B. The providing of medical care for certain groups of people.

The task of the Civil Medical Service here is concerned with the care of that class of patients who should be isolated by the Government because their condition is dangerous to the community (lunatics and sufferers from contagious diseases) or who should receive medical treatment on the grounds that their relation to the Government entitles them to help free of charge (certain groups of Government officials, industrial workers and the poor).

For the care of *lunatics* there are two large asylums, at Buitenzorg (West-Java) and at Lawang (East-Java) respectively, with a total accommodation for about 3500 patients, while a third building is in course of construction at Magelang (Central-Java).

In charge of both institutions, to which are attached workshops and market gardens, is a Managing Director who is assisted by a staff of alienists with the necessary nurses and warders.

Besides these asylums there are the so-called transfer houses for the insane, among others at Soerakarta and at Batavia also under management of an alienist with the necessary nursing staff.

These transfer houses supply the need for a good treatment of patients who otherwise, while waiting for a place in one of the asylums, would often have to remain a long time in unsuitable institutions (ordinary hospitals, prisons, etc.).

At the same time in the transfer houses patients are divided into two classes; lunatics who really need the care of an asylum and those who on account of the still existing lack of sufficient accommodation in such institutions, can be returned to society.

In some of the principal towns of the Outlying Possessions, also, where the lunatics must often wait a long time for a convenient steamer to take them to Java, institutions (so called nursing homes) will be established, with a graduate nurse for lunatics in charge.

For the care of *sufferers from contagious diseases* there are Government hospitals equipped for this purpose, quarantine stations, etc. For lepers there are separate institutions, namely the leprosy home at Pelantoengan (Semarang) and the Semaroeng institute at Sourabaya, both of which are Government institutions under the management of the Salvation Army, while many private leprosy homes in other parts of the Archipelago are financially supported.

Mention may also be made here of the so-called beri-beri institute at Buitenzorg, which is used partly for the care of sick convicts and partly for the isolation of beggars suffering from hideous diseases.

Medical care for the many Government officials to whom, either by general or by particular order, is granted the right to free treatment and medicines from the Government, also for the poor (and prisoners) is furnished by Government physicians or by civil doctors and military surgeons appointed by the Civil Medical Service or by other private physicians who are especially assigned to this work.



GOVERNMENT MONOPOLIES

The Salt Monopoly

The Opium State-Monopoly

The Pawnshop Department



CHAPTER VII.

The Salt Monopoly.

With a few exceptional cases, the manufacture of salt other than for the needs of the Dutch East Indian Government and with its sanction has for a long time been prohibited in Java and Madura, while in the Outlying Possessions, until recently, it was made for the most part without restrictions.

At the present time, also, salt manufacture is carried on free in a number of provinces in the Outlying Possessions, but only in a primitive way by the Natives for their own or for local use. In South Celebes salt is manufactured on a larger scale and from this source of supply is distributed to the surrounding islands.

In most districts of Sumatra and Borneo the Government has established a monopoly, while in some parts of Sumatra the import is free but the manufacture is prohibited. In those parts salt is imported, chiefly by private parties, from Singapore, Penang, British India and Siam, which import in 1918 amounted to 13.147 tons, principally destined for Sumatra and the surrounding islands.

The manufacture by the Government takes place on the island of Madura, where the salt is converted by the Natives by evaporating seawater in pans, after which it is delivered to the Government at a fixed price of 10 guilders per kojang (± 1850 K.G.).

A suitable site has also been purchased by the Government for the purpose of taking the manufacture partly into its own hands. The conversion of this field into saltland was partially completed in 1918, at which time the Government began to manufacture its own salt.

The product is sold in block form. These blocks are made in two factories in Madura.

The transport to the salt markets is usually done by the Government. The sale is carried on for the Government by European and Native salt vendors.

Importation of salt into the districts over which the Government exercises a monopoly is forbidden, unless it is fine table salt or required for the preservation of foodstuffs and packed with them.

Beneath follow some figures regarding the production, sale and revenues derived from the salt monopoly during a period of five years.

	Number of salt pans	Quantity of salt delivered in tons of 1000 K.G.	Factory preparation		Sale of salt in the districts under the salt-monopoly in tons		
			Production in tons	Cost per ton of brick salt	Java and Madura	Outlying Possessions	Total
1914	4.439	211.475	84.991	f 27.—	83.285	15.981	99.266
1915	4.464	160.618	98.773	„ 21.59	91.438	15.644	107.082
1916	4.575	47.993	104.144	„ 22.12	97.447	17.134	114.581
1917	4.571	53.266	140.716	„ 22.12	103.757	18.114	121.871
1918	4.702	240.686	132.855	„ —. 1)	103.779	20.663	124.442

1) Can not yet be given.

Receipts and expenditure of the salt monopoly in thousands of guilders.

	Receipts	Expenditure	Balance
1914	12.783	5.527	7.256
1915	14.064	5.130	8.754
1916	15.094	4.884	10.210
1917	16.222	5.663	10.559
1918 2)	17.152	6.346	10.806

2) Preliminary results.



Tree near Lagg-Apo

The Opium State-Monopoly (opiumregie).

Before September, 1894, the right to retail opium in Java and Madura was leased out. This licence system gave rise to many abuses and to encouraging the use of opium, for which reason, on the aforesaid date, and by way of a trial, the Government began in the residency of Madura to take the opium exploitation into its own hands under the name of the „Opiumregie“. In 1904 this monopoly was established throughout Java and Madura.

In the Outlying Possessions, the sale of opium was in some districts leased out by the Government, in others by the Native rulers, in still others only an import duty was levied, here and there the importing of opium was forbidden, while there were also districts where the sale was entirely free and not subject to any law.

Since 1913 the „Opiumregie“ has been introduced in all the Outlying Possessions, with the exception of the greatest part of the residency of Ternate and its Dependencies (where it is only introduced in the island of Ternate and a small part of the island of Batjan) and in the divisions Southern and Western New Guinea of the residency of Amboina. In the districts here which do not belong to the monopoly region, however, the import of opium is forbidden.

In the regions of the „Opiumregie“ the import and the sale may take place only through the Government.

The raw opium required by the monopoly is bought in Bengal. The tjandoe (prepared opium) is packed in tubes, which cannot be opened without being damaged and which therefore cannot be filled with other opium and passed on as unopened monopoly-tubes.

The sale takes place through officials, who receive a regular monthly salary. In contrast with the State-monopolies elsewhere, the „Opiumregie“ in Netherlands India recognizes no intermediary parties, who might have an interest in the extension of the sale. This tends to discourage the use of opium, as do still other measures which have been taken to limit its use as much as possible. To name all these would take too much space, so that the following incomplete review must serve the purpose.

In the first place, in many parts of Netherlands India, private persons are prohibited from having in their possession any opium, even though it may come through the monopoly; in other districts the possession and transport of Government opium is only allowed to holders of a personal licence, in others it is allowed to certain classes of the people without permission, but otherwise prohibited to everyone who has no licence. In several districts these licences may not be given to the Native population nor to other specified groups of people.

Districts where such restrictions are in force are called „prohibited areas

Outside the prohibited areas, the possession of Government opium is forbidden throughout all Netherlands India to men in the service of the Royal and the Government Navy and to Native soldiers of the land-forces; it is also forbidden to Government officials.

Furthermore, it is permitted to Europeans, only if they hold a special licence.

Opium may not be sold to young people under eighteen years of age, while trade in government opium is everywhere forbidden.

Furthermore, to limit the use, in most of the residencies of Netherlands India, the price at which the government opium is sold is being gradually but considerably increased.

Again a considerable decrease has been effected in the number of shops and of dens, the latter being places where the public is given opportunity to use opium. These dens may only be kept by persons who have a permit from the head of the provincial government, while their exploitation is besides subject to certain limiting conditions.

Also with respect to the import, the possession, the sale and the export of morphine, cocaine, eucaine and other surrogates of morphine, various prohibiting regulations are in force, just as for the export and the transport of opium.

For further details regarding the „Opiumregie” and the prohibition regulations for opium, reference may be made to the report of this Department for the year 1915, which contains a brief history of the monopoly and its restrictions.

The only tjandoe to be bought is that prepared from Bengal opium, of which in 1918 a total of 2,336,276 thails (1 thail = 58.6 G.) was sold, meaning 984,487 in Java and Madura, and 1,351,789 in the Outlying Possessions.

The Pawnshop Department.

To overcome the grave disadvantages connected with the existing pawnshop licences, which went hand in hand with usury, the Government decided in 1903, after a trial period, to take over the exploitation of pawnshops. This exploitation has since been gradually introduced throughout Java and Madura, while at the same time the licences have been withdrawn.

In 1917 this measure was completed and the licenced pawnshop in Java is now a thing of the past. It is expected that in 1921 the exploitation of Government pawnshops will be begun in the Outlying Possessions.

If it is found to be necessary the number of these establishments in Java and Madura will be increased.

Where the Government exploitation exists, it is forbidden under penalty to give loans either in money or merchandise in smaller amounts than /100.— against the receipt of a pledge.

These prohibitory measures were introduced in 1910 in order to put down clandestine pawning, which was then very prevalent and by which the purpose would have been lost for which the Government exploitation was striving.

The turnover of this exploitation is steadily increasing, especially since during the course of 1912 the valuation of the pawns was revised, and the article pledged is no longer calculated according to its intrinsic, but according to its market value, whereby higher amounts can be lent.

After a certain time has elapsed the unredeemed pawns are sold at auction. If a profit remains after the money advanced plus the interest, this is kept for a year at the disposal of the borrower.

As a rule the management is in the hands of European officials. In the smaller pawnshops, where the sums loaned amount to the limit of /150.000, Natives are also appointed.

The exploitation shows a loss on loans for amounts of fifty cents and less, but outside of that the venture seems to be profitable.

Following are some figures with relation to the pawnshop service.

	Number of pawnshops	Number pawns brought in	Loans given in Glds.	Number of pawns redeemed	Number pawns sold at auction	Cost of exploitation in Glds.	Balance
1914	298	31.414.265	66.852.018	25.986.497	5.440.058	5.648.558	3.508.928
1915	313	34.636.918	75.897.419	50.160.705	4.607.161	6.114.959	4.552.854
1916	318	36.365.258	83.973.765	51.407.671	4.298.984	6.459.109	5.510.986
1917	338	40.451.428	99.622.683	54.701.692	4.544.720	6.865.307	7.369.578
1918	352	44.816.078	116.904.358	58.841.662	4.452.089	7.814.450	9.080.095



River scene in Central-Java

AGRICULTURE, CULTIVATIONS, FORESTRY, etc.

Agriculture

Agricultural Information Service

Agricultural Instruction

Civil Veterinary Service

Veterinary School

Veterinary Laboratory

Fishery

Irrigation

Forestry

The Government Rubber Industry



CHAPTER VIII.

Agriculture.

The importance of Netherlands India as a producing area of raw materials for foreign countries has increased very considerably in the last years.

These raw materials are, in the first place, agricultural products which come from estates chiefly under European management, as well as from native cultivation.

Of the so-called European cultivations, the principal ones are: sugar, coffee, rubber, tea, tobacco, peruvian bark, cocoa and fibres. Among the native-grown crops may be mentioned: rice, corn, cassava, tobacco, cocoanut, peanuts, sugar and tea.

Sugar.

The cultivation of sugar, undoubtedly the foremost of the European cultures in Java (in the Outlying Possessions this culture is not yet found), has been able to develop very considerably during the last 25 years and is now carried on very intensively, so that the Java sugar industry is now, technically speaking, the most up to date in the world. Systematic scientific investigation and instruction are undoubtedly the factors in its success.

In 1894 the area of Java planted with sugar cane amounted to 75.048 H.A., in 1904 to 103.690 H.A., in 1914 to 147.538 H.A. and in 1918 to 163.152 H.A.

The total sugar cane area has therefore increased 117% in the last 25 years.

The fields, which as a rule are planted every three years, are generally obtained by leasing from the native population.

To prevent the diverting of too much ground from the native planting of foodstuffs, the so-called „Ground-rent Ordinance” („Grondhuur-ordonnantie”) was issued in 1894, which was altered in 1918.

For enlarging the area under cultivation permission from the Government is necessary.

The total cane production in 1918 amounted to 15.882.239.027 K.G.

The average sugar production per gross H.A. was in 1894, 7070 K.G., in 1914, 10.191 K.G., and in 1918, 10.913,5 K.G.

The total sugar production in 1918 was 1.778.207 tons, as against 530.963 tons in 1894, an increase, therefore, of 235%.

The sugar manufacturers have amalgamated into an organisation called „The general Syndicate of sugar Manufacturers in Netherlands India“, which is established at Soerabaya.

The Daily Board of Control of this corporation has served since 1906 as an advisory committee to the Government.

Coffee.

The cultivation of coffee by the Government was given up in 1918/19.

Originally the so-called Java coffee (*Coffea Arabica*) was chiefly planted. When this variety suffered too much from the coffee-leaf disease, it was replaced by Liberia coffee.

In the beginning of the twentieth century Java imported from Africa the Robusta coffee, which was soon planted everywhere and which is more and more outclassing the other varieties.

Besides the above, Quillou, Excelsa and Abeocuta coffee are also planted.

At the end of 1918, there were 408 coffee estates, of which 98 are located in the Outlying Possessions.

On the estates in Java 45.042 H.A. and in the Outlying Possessions 11.342 H.A. were planted with coffee alone. The plantings, where coffee is grown together with other crops amount to 71.731 H.A. in Java and to 16.648 H.A. in the Outlying Possessions.

Rubber.

The rubber cultivation in Netherlands India is of comparatively recent date and none of the other cultures can show such rapid progress.

The plantings consist chiefly of *Hevea Brasiliensis*, which was introduced in Java in 1876 from the Amazon region.

The plantings of *Ficus Elastica*, which is indigenous to Netherlands India, are of comparatively small importance, while those of *Castilloa Ceara* and *Manihot* are still less so.

The number of estates where rubber is grown amounts to 677 of which Java has 393 and the Outlying Possessions 284.

The area planted with rubber alone, or without catch crops, was at the end of 1918, 73.293 H.A. in Java and 150.221 H.A. in the Outlying Possessions.

The area where rubber is planted together with other crops is 79,727 H.A. in Java and 16,322 H.A. in the Outlying Possessions. About 70 % of the plantings are in production.

The Government is exploiting several rubber estates in Java and one in Sumatra.

Tea.

To the most important of the mountain cultures belongs the growing of tea, which in Java is mainly carried on in the Preanger Regencies.

Tea is also planted in the Outlying Possessions and especially in Sumatra, where this industry is rapidly developing.

The Natives of the Preanger Regencies also grow tea. The leaf produced by them is sold to the factories by which it is prepared for the market.

Tea seed is imported in great quantities from Assam. Since the condition of this was often very poor, the Government decided in 1915 to establish an official teaseed control at Tandjong-Priok, which regulation was extended the following year to Belawan-Deli. All the seed imported is examined and results have already turned out very favorably for the industry.

In 1902 an Experimental Station for Tea Cultivation was founded at Buitenzorg, for the purpose of giving out scientific information, which is very much appreciated.

The teaplanter have a union called the Soekaboemi Agricultural Union.

At Batavia, also, a „Tea Expert Bureau” is established, the chief purpose of which is the compiling of statistical material.

The number of estates on which tea is grown amounts to 295, of which 268 are in Java and 27 in the Outlying Possessions.

The total area under cultivation is 89,384 H.A., of which 81,680 H.A. are in Java and 7,704 H.A. in the Outlying Possessions.

Tea combined with other crops is seldom found.

Tobacco.

The tobacco culture is carried on in Java both by estates and by the Natives, while in Deli it exists only on estates.

Also very much in vogue is the arrangement whereby the crop is raised independently by the Natives and then bought up by the estates.

In other parts of the Archipelago, also, tobacco is grown, for instance, in Lombok, on Sumatra's West Coast, etc.

For the purpose of giving scientific instruction to tobacco planters, the Experimental Station for tobacco of the Vorstenlanden is established at Klaten, the Experimental Station at Djember and the Deli Experimental Station at Medan.

Peruvian Bark.

Java is the world's foremost production field for Peruvian bark, although the plant is not indigenous here and first in 1854 was imported from South America on any considerable scale.

The cultivation of this crop is carried on by the Government as well as by private enterprise. Up to 1877 a Government Estate at Lembang (Preanger Regencies) was the only one producing Peruvian bark, but in that year private enterprise also took up the cultivation with such enthusiasm that soon the market was oversupplied. Besides, all the bark had to be sent to Europe, where the quinine was prepared by manufacturers who had formed a trust and therefore could regulate the prices according to their wish.

To cope with the situation, a quinine factory was established at Bandoeng in 1898, while in 1913 co-operation began with the quinine planters in Java, whereby the unfavorable circumstances were partly neutralized.

While in most other producing countries this industry was unprofitable and had to be given up, it could hold its own in Java, thanks principally to the cheap labor.

Peruvian bark is also grown on the West Coast of Sumatra.

At the end of 1918 the number of estates in Java amounted to 104 and on Sumatra's West Coast to 4.

In Java 15,060 H.A. were planted with cinchona alone and on Sumatra's West Coast 511 H.A., while 671 H.A. and 8 H.A. respectively were planted with cinchona together with other crops.

Cocoa.

The cultivation of cocoa, which is carried on by a few estates in Java, is of relatively small importance as compared with the other branches of agriculture.

Cocoa is also grown by the Natives, but on a very small scale.

The number of cocoa estates in Netherland India amounts to 35, of which 34 are in Java.

The area devoted exclusively to cocoa consists of 2,501 H.A. in Java and 7 H.A. in Bali and Lombok, while that devoted to cocoa together with other crops amounts to 4,268 H.A. in Java.

Cocoanuts.

The number of estates where the cocoanut is raised has increased during the last years, but as compared with the Native cultivation is of very little importance.

For figures regarding the Native cultivation see page 115.

The number of cocoanut estates in Netherland India amounts to 226, of which 95 are situated in Java and 131 in the Outlying Possessions.

The area planted with cocoanut alone amounts to 5.490 H.A. in Java and to 14.967 H.A. in the Outlying Possessions; together with other crops it amounts to 1.431 H.A. in Java and 1.580 H.A. in the Outlying Possessions.

Fibres.

As estate cultures are found in Java the growing of capok, sisal hemp and manilla hemp.

Capok is also planted in very considerable quantities by the Natives.

In 1918 the crops were distributed as follows:

Capok.

Unmixed: 1.064 H.A. in Java

mixed: $\left\{ \begin{array}{l} 6.953 \text{ H.A. in Java and} \\ 1.4 \text{ H.A. in the Outlying Possessions} \end{array} \right.$

Sisal Hemp.

unmixed: 9.525 H.A. $\left\{ \begin{array}{l} \\ \end{array} \right.$ in Java alone.
mixed: 21 H.A. $\left. \begin{array}{l} \\ \end{array} \right\}$

Manilla Hemp.

unmixed: 21 H.A. $\left\{ \begin{array}{l} \\ \end{array} \right.$ in the Lampong Districts.
mixed: 192 H.A. $\left. \begin{array}{l} \\ \end{array} \right\}$

Oilpalm.

Interest in the cultivation of the oilpalm has increased during the last years, especially in the Outlying Possessions.

The number of estates planted with oilpalm amounts to 58, of which 4 are in Java and 54 in the Outlying Possessions.

The cultivation of oilpalm, unmixed, amounts to 136 H.A. in Java and 3.538 H.A. in the Outlying Possessions, while 55 H.A. in Java and 2.016 H.A. in the Outlying Possessions are planted with oilpalm mixed with other crops.

Rice.

Rice is the principal food of the Native population in Netherlands India and at the same time is the chief crop of the Native agriculture.

Nevertheless the production is not sufficient for the demand and the shortage must be covered by a very considerable import from foreign countries. This circumstance, together with the general food shortage resulting from the world war, has lead to great difficulties with respect to the people's food supply.

Naturally, in the first place, the export of rice has been forbidden for the present, although under normal conditions the quantity of about

50.000 tons of the superior kinds were exported. Furthermore the cultivation of this crop has been extended over all the ground available and promoted by every possible means.

The rice harvest of 1919 in Java and Madoera amounts to about 7 million tons of padi (the product before it is threshed and hulled) which quantity will turn out about 3.5 million tons of hulled rice. This crop is produced from a total area of about 3.5 million H.A. Of this area over 3 million H.A. are irrigated fields, called sawahs, and over 450.000 H.A. are non-irrigated lands. The share of both kinds of ground in the total harvest is estimated at 6.6 million and 0.4 million tons respectively.

The damage done yearly to the cultivated area by diseases and plagues, among which root-rot, bores and louse pests, floods and drought are the principal ones, amounts to an average of 4 0/0, more or less.

As to the cultivation and the harvest of rice on the other islands of the Archipelago no trustworthy records are available.

Next to rice *Indian corn* is the principal food for the greater part of the Native population. In Java and Madura this plant is grown chiefly in the Eastern and Middle parts. In Western Java, where the rainfall is heavier, the cultivation is on a much smaller scale. For 1919 Java and Madura counted on a crop of 1 1/2 million tons from an estimated area of over 1.800.000 H.A.

The export of this product has been very important in some years, but for the present the export of this as well as of all other foodstuffs necessary for the people, is temporarily forbidden.

Cassava, also, is a very important article of food and its finished products, known as tapioca-meal, -pearl and -flake, is an important article for export. Stimulated by the Government the Native cultivation of this plant has very much increased during the last years. In 1919 Java and Madura harvested about 900.000 H.A. of which the crop in roots is estimated to be 6 million tons.

As a byproduct in foodstuffs the following plants are of very great importance to the Native population.

Batalas of which Java and Madura planted an area of about 287.000 H.A. in 1919, and of which the crop in roots is estimated to be about 1.500.000 tons.

Kedele (soja beans) of which the area in 1919 amounted to about 153.000 H.A. and a crop of over 18.000 tons is expected. Since the production does not nearly cover the demand, great quantities are imported every year from foreign countries.

Arachides, which are chiefly raised for export, have been grown on a somewhat smaller scale during the last few years in favour of the



Lead workings at the old mine, Tule Lake, Nevada.

principal food plants. Nevertheless, in 1919 Java and Madura planted 10,000 H.A. in peanuts. The crop is estimated at about 38,000 tons of dry, hulled seed.

Among the overyear utility plants the *Cocoanut Palm* (*Cocos Nucifera*) ranks high in importance.

In connection with the great demand for vegetable fats capital has paid much attention to the cultivation of this palm, especially in recent years. The number of European cocoanut estates is continually increasing.

The enumeration of cocoanut trees for all Netherlands India in 1917 gave a result of over 65 million for Java and Madura, of which over 37 million are fruitbearing; for the Outlying Possessions nearly 44 million of which nearly 23 million are fruitbearing.

The total produce of these trees in Java and Madura, made into copra, is estimated at almost 568,000 tons, (of 1000 kg.), in the Outlying Possessions at about 215,000 tons.

On Java there were of this quantity manufactured in that year, about 40,000 tons in the oilfactories and the export amounted to about 60,000 tons, while the remainder, about 268,000 tons, was almost exclusively manufactured and consumed by the Natives themselves.

Since then the number of factories in all Netherlands India as well as the producing capacity per factory has considerably increased. At the end of 1919, consequently, the need of raw material necessary for the vegetable-oil industry amounted to about 200,000 tons of coprah. The factories are quite modern in construction and are in no way inferior to the best in Europe and America.

For raw material they must still rely chiefly on the crop raised by the Natives, and can obtain only a very small amount of coprah from the great agricultural estates. These estates in Java and Madura have as yet only a total area of about 7000 H.A. (= 1,400,000 trees) of which about 1500 H.A. (540,000 trees) are in production with an estimated crop of 5000 tons of coprah. In the Outlying Possessions the area cultivated by estates amounts to a total of about 16,500 H.A. with = 5,500,000 trees, of which about 600,000 (on 5000 H.A.) are bearing fruit, producing about 6000 tons of coprah.

Agricultural Information Service.

This service, which has developed greatly in the last ten years, is to the purpose of technical instruction, particularly of the native agricultural industry, and forms the link between this industry and agricultural science by making the results of this science of as much service as possible to native agriculture, wherever occasion offers.

The staff of the Agricultural Information Service consists of Europeans as well as Natives.

Ultimo December, 1918, the European staff consisted of 19 agricultural instructors, 1 agricultural advisor, 17 aspirant teachers and temporary agricultural officials and 11 overseers and employees; the Native staff consisted of 27 native teachers, 22 native aspirant teachers and 8 employees.

The staff is distributed over 14 divisions in Java and Madura and 12 divisions in the Outlying Possessions.

As a rule the Agricultural Division is under the supervision of a European teacher of agriculture, an expert, who nearly always has his training in the Higher School of Agriculture (now the Agricultural University) at Wageningen. In future only those who have received the degree of Agricultural Engineers from this institution will be made supervisors of the above named divisions.

The work of the Agricultural Information Service is done by having the assistants get into close touch with the people. By inspiring confidence and interest, by planning and helping to bring about improvements and by instruction in the broadest sense of the word, Native agriculture is aided in its development and the general economical condition of the farmer is improved. The attainment of this goal is striven for not only by practical instruction but also by the teaching of elementary agriculture to adults and younger people.

Furthermore experimental fields are being laid out for the purpose of studying agriculture and means of improving the same. The results of these experiments are often propagated at demonstration fields. The demonstrations comprise the improvement of seed and planting material, problems of manuring and tilling, improvement of agricultural tools, the laying out of dry nurseries for rice, the combating of diseases and plagues, etc.

The task of the Agricultural Information Service staff includes furthermore the making of research and the giving of agronomical advice regarding intended or proposed irrigation projects and the irrigation and agricultural conditions of certain districts, the compiling and controlling of all kinds of records along agriculturotechnical, economical or phytopatological lines, etc.

The officials of the Service furthermore concern themselves with the development of the agricultural community life, particularly with the establishing of Native co-operations or other associations for the furthering of the material interests of the Native farmers; they control the data of the agricultural statistics and are the advisors of the government officials so far as the planning of measures for the furthering of agricultural interests is concerned.

An important minor part of their work also is the providing of food supplies, such as taking care that sufficient planting material is available and occasionally work in connection with the taxation of available food stores and their proper distribution.



Robusta coffee in bloom

Agricultural Instruction.

In this department, also, the staff of the Agricultural Information Service is active.

The highest instructional institute in the agricultural line is the *Secondary Agricultural School* in Buitenzorg, where aspirant Native teachers of agriculture receive their training. The school is open to students of any nationality, but is attended almost entirely by Natives. Those who wish to qualify as prospective Native teachers of agriculture receive an allowance during their studies.

Aspirant Native teachers of agriculture after passing an examination, may be appointed as Native agricultural instructors.

The Native agricultural instructors are adjoined to the European agricultural instructors. In many respects they have done good work, but the supervisors of the agricultural divisions feel the need of a staff with less theoretical schooling and more practical experience for actual service in the field, especially in order to come into closer contact with the people by means of this staff, whereas the present Native agricultural instructors, by reason of their somewhat too highly chosen training, are rather at a distance.

It is therefore the intention to appoint Native agricultural teachers for the giving of instruction and as assistants in managing the agricultural divisions, while the staff for the field service (agricultural overseers) is drawn more and more from the so called *cultuur schools*, where practical training is more emphasized and from which the graduates appear to be giving satisfaction in the field.

At present there are two of these institutions, the *Cultuur School* at Soekaboemi and one in Malang. Young men of every nationality, who have graduated from a European primary school, may be admitted.

The schools are managed by a board of directors partly consisting of men well known in agricultural circles so as to get in touch with the practical side of agriculture.

Instruction along this line is also given in the *desa agricultural schools*. At the head of these schools are preferable Native instructors of agriculture.

The arrangement and the nature of this elementary agricultural instruction for the benefit of the Native population is given more in detail in the former yearbook of the Netherlands East-Indies.

At present there are 14 *desa agricultural schools* in Java and Madura and 8 in the Outlying Possessions.

Preparations are being made for the founding of three schools. Plans for the establishing of more schools of this kind are held in abeyance for lack of a suitable staff.

More and more attention is being paid to the giving of *course-instruction* in the native language to adults, among whom are many farmers already in business for themselves. To this class of students belong also many *desa* teachers and minor officials of the irrigation- and forestry service.

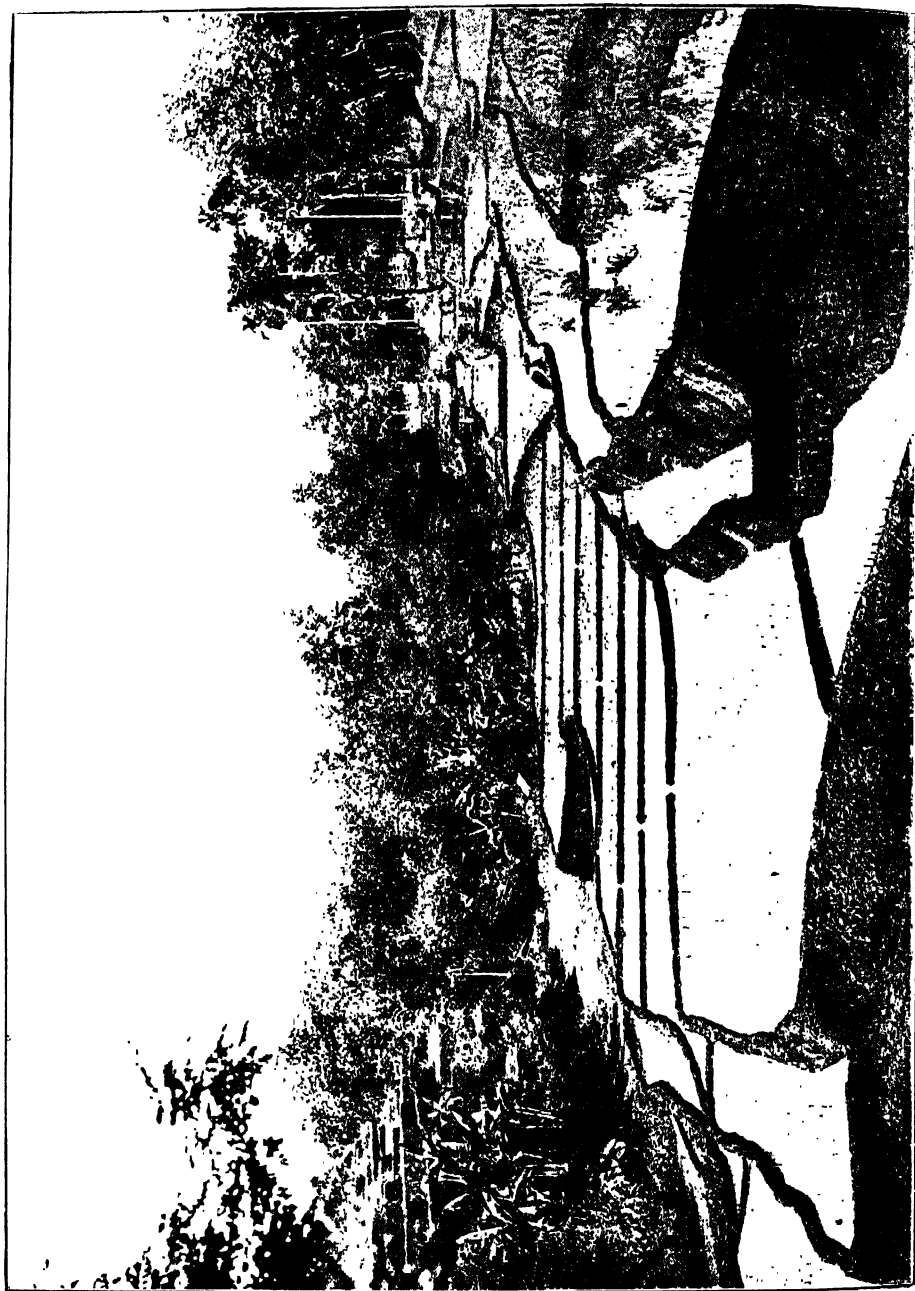
The subjects taught are entirely adapted to the local needs.

The course-instruction, depending on the previous education of the students, is given by Native agricultural instructors (sometimes also Europeans) or by graduates of the *desa* agricultural schools. A course of this kind is also given occasionally by assistant-teachers from Native government schools, who themselves have taken the course from an agricultural instructor, and this also has given satisfactory results. It is the intention to experiment particularly along this lastnamed direction. Only when the hereafter mentioned normal school instruction in agriculture has worked out satisfactorily, can the desired extension be obtained.

Since 1915 instruction in agriculture and kindred subjects has been given in the normal schools for native teachers and in the training school for native officials. Instruction in agricultural economy in these schools is principally assigned to agricultural officials, while the kindred subjects are taught by Europeans engaged by the schools and having a primary degree for Agriculture.

In connection with the principle adopted to lead the instruction of the second class native schools more or less in an agricultural direction, this branch is taught in accordance with a plan made up with the Department of Agriculture, Industry and Commerce, in those normal schools from which the staff of the second class native schools is drawn. The object of this is not that instructors trained in the normal schools shall teach agriculture and nothing else, but that their teaching shall be permeated with correct ideas and opinions regarding agriculture, and that they shall lead the interest of their pupils in this direction.

It is the intention to reserve for this purpose a native agricultural instructor for each of the normal schools, but through lack of such teachers this has not yet been possible. The program in connection with this has therefore been cut down and is chiefly limited to the teaching of kindred subjects by the native staff engaged by the normal schools. In the meantime there is already in connection with each of the normal schools a schoolgarden in which practical instruction in agriculture is given two hours a week. This practical instruction is given by native agricultural instructors.



Young man in boat

Civil Veterinary Service.
— —

This service is charged with:

the investigation and care of the health condition of the livestock and the carrying out of measures for the prevention and fighting of contagious diseases, and also

with the giving of advice and the supervising of measures for promoting the preservation, increase and improvement of the horse and cattle stock belonging to the native population.

At the end of 1918 the skilled staff of the service consisted of: 1 inspector, 4 assistant inspectors, 41 Government veterinary surgeons, 24 assistant Government veterinary surgeons, 4 native veterinary surgeons, 257 cattle inspectors and 1 instructor in shoeing.

The livestock at the end of 1918 consisted of about 4 million cattle, 2 million buffaloes, 500,000 horses, 5 million goats, 2½ million sheep and 1 million pigs.

The veterinary police guards: against the introduction of contagious diseases from abroad, against the bringing of these diseases from one island to another within the Dutch East Indian Archipelago and against their local distribution.

In 1918 the state of health of the livestock was in general favorable. Among the contagious cattle diseases cattle plague, dourine and pleuropneumonia were not found; scabies and piroplasmose only in rare cases; malleus and saccharomycose, though much spread, in general also only sporadical; anthrax chiefly on the island of Sumbawa; septicæmic chiefly on the island of Celebes; aphtæ epizootica in Middle and East Java; surra very much spread among horses and buffaloes; tuberculosis chiefly only among imported Australian cattle and their offspring; rabies only among dogs and lymphangitis infectiosa chiefly on the East Coast of Sumatra, in a small part of which pig-plague and chest disease were also encountered.

Measures for the preservation, increase and improvement of the horse and cattle stock belonging to the native population are the special task of the Government veterinary surgeons.

For improving the cattle stock the importation of highclass thoroughbreds is continued. As in 1917, so also in 1918 and 1919 thoroughbred bulls and cows were bought in Ongole (Madras Presidency, British India) and were sold for breeding purposes to the Native population, chiefly of the residencies of Kedoe and Rembang. Taken as a whole, the results are very good. From the island of Sumba, where in 1914 about 500 thoroughbred Ongole cows and some bulls were imported for the purpose of producing breeding bulls for Java and elsewhere, over 200 young bulls were obtained. From Guyrat (Bombay Presidency, British India) were imported some

thoroughbred bulls and cows for the needs of Native cattle breeding on Sumatra West Coast. To improve the cattle stock of various dairies in Java, the number of which is gradually increasing and where milkers of European blood are much needed, thoroughbred black-spotted Dutch gulls are used on the „General de Wet” farm at Tjisaroea, Preanger Regencies. In the provinces of Bali, Lombok and Madura good results are obtained by pure breeding with native bulls. By selection and castration the improvement of the cattle stock is also promoted as much as possible.

To improve horse breeding in the residencies Sumatra West Coast and the Preanger Regencies Sandalwood stallions are almost exclusively used for crossing, while in the Batak lands and the islands of the residency of Timor and Dependencies and Celebes and Dependencies pure breeding is practiced. Lack of good breeding stallions is in most districts a great handicap to improvement of the horse stock.

For the improvement of the goat stock Bengal goats and bucks are imported.

In 1918 very much livestock was slaughtered, chiefly cattle, a result of the extraordinarily high prices of hides.

± 13.000 pigs are exported yearly to Singapore, chiefly from Bali, where pig breeding is carried on with good results.

The Netherlands India Veterinary School.

This is a secondary trade school where young men of every nationality are prepared for Indian Veterinarian.

For admission to the school a diploma from the Mulo or an institution of similar rank is necessary. The course takes four years.

The examination for Indian Veterinary Surgeons includes the following Courses:

1. General pathology and pathologic anatomy of domestic animals.
2. Special pathology and therapeutics of domestic animals.
3. Surgical anatomy.
4. Surgery, including hoof diseases and ocular surgery.
5. The study of operations and dressings.
6. General and special pharmacology and science of poisons.
7. Obstetrics.
8. Veterinary surgical clinic.
9. Pharmacy.
10. Parasitic and contagious diseases.
11. Commissioned veterinary surgery and veterinary police.
12. Cattle raising (general and particular knowledge of fodder).
13. Milk and meat hygiene.
14. Rural economy.

The pupils, who agree to serve the Country as Assistant Government Veterinaries, at least five years after graduation, get a subsidy during their studies.

Attached to the school is a clinic for the purpose of clinical instruction. Patients are treated here free of cost.

The Veterinary Laboratory.

In Buitenzorg is established a veterinary laboratory for scientific research of animal diseases existing in the Archipelago. The sera and inoculating material necessary for contending with these diseases are prepared in this laboratory.

The following are regularly prepared:

- a. malleine
- b. tuberculine A
- c. tuberculine B
- d. serum and vaccine against septicaemia haemorrhagica
- e. id against anthrax and
- f. id. against sarcophysema gangrenosum.

Fishery.

Almost everywhere along the coasts of the islands of the Dutch East Indian Archipelago seafishery is carried on, though for the most part as a side line, with agriculture or some other means of livelihood. Along the northern coast of Java and Madura however, and also on some coast regions of the Outlying Possessions with a greater density of population and wider market possibilities, seafishery has been able to develop into an independent source of income. The produce of the native seafishery though not small, is not sufficient to satisfy the demands. With the great increase of the population in Java and Madura, dried fish must be imported into Java, partly from foreign countries, partly from districts in the Outlying Possessions, to supply the increasing shortage in fishfoods.

Fishery is promoted as much as possible by the Government. In the interest of the fishing industry are founded:

- a. the laboratory for deepsea research to which are attached, among others, two zoölogists and one oceanographer, for the purpose of studying the mode of life and conditions for living of organisms in the sea (the laboratory has the use of a research ship for this purpose).
- b. the Fishery division of the Department of Agriculture, Industry & Commerce, to which are entrusted the tasks in connection with the interests of the sea and inland fishery and of the fishconserving industry.

Seafishery. A more intensive development of this industry proved to be impossible without the construction of simple harbour accommodations in the most important fishing centres on the northern coasts of Java and Madura. Such fishing harbours are now being built at Sarang (residency of Rembang) and at Passongsongan (residency of Madura). Plans have been laid for two other harbours, while it is intended to provide the necessary accommodations on two rivermouths on which fishing villages are located, and so bring these villages into more favorable condition.

By providing these harbours not only may the fishery be carried on with more perfect materials than are at the disposal of the native population, but fishing with the more primitive material of the people is also highly benefited.

By appointing an experienced, efficient staff from Holland an attempt is being made to perfect the industry.

Through advances, six fishing associations were provided with capital for the extension of trade credit to their members. Two of these associations have already after five years repaid these advances and can now supply the necessary credits from their own capital.

By the establishing of fishery banks provision is also made for need of cheap trade credit for the fishermen. In order to have at their disposal the necessary trade capital, the banks receive advances from the Government at an interest of 5⁰⁰/₁₀ a year, which they must repay within ten years at halfyearly terms.

Fishery enterprises of greater extent and of more importance than those carried on with native capital, do not exist.

Inland fishery. Along the entire North Coast of Java fishponds are found, which cover a total area of more than 55.000 H.A.

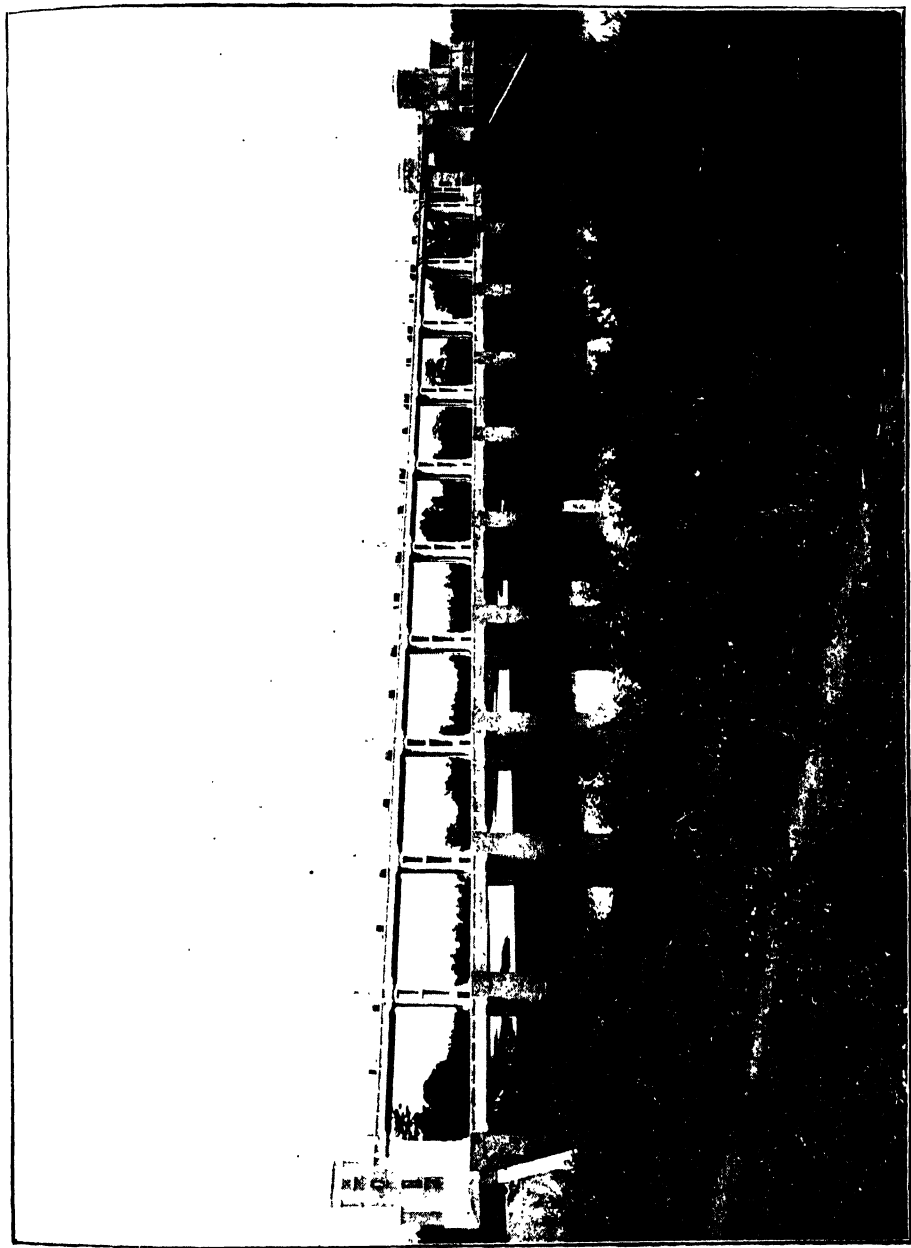
Some of these ponds are diminishing in productiveness. An investigation as to the cause of this brought to light the fact that it is due to an insufficient renewing of the water at high tide. For a proper irrigation of these ponds, whereby this difficulty will be removed, improvement are being made.

Measures are also being taken to make the „wadocks” (large reservoirs made for the irrigation of ricefields), lakes, etc, more productive.

In Java fish hatcheries are also being established whereby a sufficient number of small fry is obtained.

At Tasikmalaja an institute for inland fishery is established.

The fish conserving industry. The quality and preservation of fishproducts made in the fishsalting establishments in general leave much to be desired. A fishery technologist has been appointed to plan measures which will bring about an improvement in this respect.



Irrigation. Reservoir in the Tjibodjeng River, North Bantam

Irrigation.

The growing of Java's principal food crop, rice, in general depends to a great degree upon the arbitrary disposal of a large supply of water.

To provide for this need, the water from the rivers must be used for irrigation. The construction works by means of which the water is drawn from the rivers and distributed over the ricefields, were originally planned and carried out by the Natives themselves. Naturally this could only take place in a primitive way and besides had to be limited to the drawing of water from wells and smaller rivers. Nevertheless, the people have obtained very satisfactory results with the means at their disposal, and even at the present time about 55 % of the ricefields are watered by means of primitive canals constructed by them on the initiative of their chiefs, of materials with little durability such as bamboo, wood, straw, loose stones, etc.

In the course of time, however, the primitive irrigation works constructed by the people led to many difficulties; their upkeep cost much labour and much material, the canals worked into rivers, while the rivers themselves by alluviation lost a great deal of their transport power and often the irrigation system constructed in this way changed into an inundation. The results obtained from these irrigation works, moreover, do not answer the requirements for the desired rice production of the Archipelago.

The Government has always more or less promoted irrigation, also by the construction of various works. Since the last quarter of the former century, however, attention has been paid to a more systematic irrigation, which has been taken almost entirely into the hands of the Government. Irrigation is now being perfected as much as possible with might and main.

Already in 1885 a special service for Irrigation was established. The officials of this service are charged with the study, the projection and construction of new works and the management and maintenance of those already existing. They also pay attention to the improvement of the waterworks of Native construction.

In view of the fact that the people's interest is concerned with the management of the waterworks, the Heads of Provincial Government have the supervision of the management in their residency.

The main regulation of the water is in charge of the technical staff; with the regulation within the main area the staff has nothing to do and it is intended in the future to leave this entirely to the Native farmer, whereby only the strictly necessary information will be given by agricultural experts.

This, however, has not yet been possible, so that for the most part that part of the system which has been partly or altogether improved, is still in the hands of the Government or of the Department of Irrigation.

As far as it is possible the flow of water is regulated according to fixed rules, whereby the irrigation keeps place with the quantity of the water supply at a certain time of the year. At the end of 1919 there were 7 irrigation sections in Java; where such sections have not yet been established the management for the present is in the hands of the department in charge of the construction of new works.

As soon as the rice fields which were planted in the West Monsoon are no longer in need of water, the supply, in districts where the sugar industry is carried on, is in a large measure free for the sugarcane fields, which require irrigation only in the East Monsoon. During this time, however, the Natives use a part of their rice fields, providing they have not rented them to sugar growers or other estate owners, for a second rice crop, or for the planting of a so-called secondary crop, including such products as maize, pulses, arachides, tobacco, indigo and cotton. In case there is a scarcity of water the necessary irrigation is often supplied to the Natives by observing the so-called day and night system, whereby the owners of the sugar plantations have the water at their disposal during the day and those of secondary crops only during certain hours of the day and at night. By using reservoirs, such as are already in use or in the course of construction in most of the sugar cane districts, for storing the water at night, it is hoped that before long this system, which has serious disadvantages for the Natives, can be abolished and a condition brought about whereby water will be supplied during the day to all who need it during the East Monsoon.

By the improved system of irrigation, not only has the area planted in rice and sugar-cane been extended, but the yield per bouw has been increased, especially as averaged over a number of years, due to the fact that failures of crops have been considerably diminished, while the planting of secondary crops has been increased.

In 1919, there were twenty-four important irrigation works in course of construction, while plans were being made for several more. Besides these, a great number of smaller works, improvements and reconstructions are constantly being attended to.

A factor which is also receiving attention, since it is of the greatest importance to all branches of agriculture, is the care for a regular system of drains and dams, so that besides irrigation and drainage, the construction of dams is either being carried out or is being planned.

Except in Bali, irrigation in the Outlying Possessions is not yet of great importance, though it is increasing.

Some of the works that the natives have constructed in this island are far superior to similar works in Java.

In 1910 the Government made an enquiry regarding the existing and the desired irrigation works in Sumatra and Celebes.



Teak forest

Irrigation

The reports written on this enquiry mention, as do those for the South and East Divisions of Borneo, a number of districts where the construction of works would be desirable and also profitable, considering the quantity of water available in the rivers. Several of these works have since been projected and carried out.

In most of the provinces outside Java and Madura civil engineers are now appointed to construct or improve irrigation and drainage works. The authorities, also, in these districts are showing increasing activity in this respect.

The following gives a review of the total area of irrigated land in Java, also of the amounts expended on construction and upkeep during a successive number of years.

Review of irrigated land in Java

	Number Hectares	%
I. Irrigated areas where permanent works are in use	584,000.—	21
II. Irrigated areas where permanent works are in course of construction. . . .	500,000.—	11
III. Irrigated areas for which permanent works are either under consideration or in course of preparation	471,000.—	17
IV. Irrigated land and land dependent on rain, for which no plans have yet been made	1,400,000.—	51

Costs of irrigation works

Year	Total amounts (in guilders) spent on the construction and preparation of irrigation- and drainage works		Repairs and general upkeep
	Java and Madura	Outlying Possessions	
1914	6,177,802	523,754	787,251
1915	4,870,578	602,405	1,328,798
1916	5,974,539	711,410	1,796,168
1917	7,380,725	762,745	1,796,998
1918	9,055,824	785,570	2,728,105

The Forestry Service.

The care of the forests is assigned to the Forestry Service.

For more than 70 years trained forestry officials have been active in Java. The forestry there has consequently reached a much higher stage of development than in the Outlying Possessions where, until a few years ago, an actual forest control was not spoken of and where even at the present time this is still in the experimental stage. A separate discussion of these two regions is therefore desired.

Forest control in Java.

The activities of the forestry service may be divided into:

the forestry organisation, under which are included the regulation of forest boundaries, the surveying and mapping of the forests and the arranging of schemes of work;

the actual forest management, including activities for the exploitation re-forestation of the cleared tracts and other areas to be used for this purpose;

the forest guard and

the scientific forestry research.

Until a short time ago the management of the Government rubber estates was also assigned to the Forestry Service, but since 1919 the State Rubber Industry has formed a separate branch of service.

Forest organisation and management.

With regard to forest organisation and forest management the woods are classified as teak and wild timber.

A. The teak forests in Java.

The most important forests for the timber supply are the teak woods. They consist entirely or for the most part of teak (*Tectona grandis* L.) and produce the world known djati- or teakwood. They are chiefly found in the lower hill regions of Central and East Java; more than 600 M. above sealevel the growth is unsatisfactory. The climate in the teakwood regions is marked by a pronounced dry monsoon; in West Java, where the rain is more evenly divided over the year, few teak forests are found. In the dry season the teak sheds its leaves, the forest looks withered and bare and serious leaf fires are easily started, which in the long run cause the soil to deteriorate, for which reason at the present time the most careful precautions are taken against fire.

Teak does not require a very fertile ground, but is sensitive to a poor condition of the soil, such as swampiness or lack of penetrability.

Teak is used for many purposes. The durable, strong and relatively light wood is used for ship building and furniture making. It resists white ants and is therefore especially suitable for house building in the tropics and for sleeper



Natural re-afforestation. In the foreground a stretch of artificial re-afforestation

For these reasons the teak forests have been exploited since early times. Gradually the natives were compelled to chop and transport the trees. For centuries, however, very little was done to preserve the forests, for which reason most of them deteriorated. It was not until the middle of the 19th century that the Government appointed forest officials trained in Europe. One of the first reforms introduced by them was to substitute a systematical clearing for the haphazard felling of the trees which had been carried on until that time. After abolishing the forced labour of the natives in 1867, the wood cutting was leased to private individuals.

In 1880 Java was for the first time divided into forest districts, each of which at that time consisted of 25 — 80.000 H.A. Gradually the disadvantages of this extensive management and of wood cutting in lots by private individuals were more and more apparent. A new forest regulation, issued in 1897, therefore decreed that gradually all teak woods should be divided into tracts, or so-called forest sections of about 5.000 H.A. in which sections intensive management would be practised according to a detailed working plan.

The wood cutting in these districts is done chiefly by the Forestry Service. The forest regulation of 1913, which is still in force, made it possible also for the tracts which were not divided into districts to fell trees under their own management. Lack of a suitable staff, however, is the reason why the exploitation of these tracts is still leased to private individuals.

In 1894 a separate division was established in the Forestry Service, to which was assigned the forest organisation activities.

For the surveying and mapping of the forests there is, in connection with this, a surveying brigade which has already constructed excellent maps of almost all the teak woods.

The organisation brigade concerns itself especially with the planning of working schemes for the forestries. When a new tract is opened up a division network, conforming with the ground formation, is first constructed and the main shipping roads are determined. Then a detailed description of the woods takes place, which serves as a basis for the working scheme planned for the next ten years. In this scheme are included, among other things, worked out plans for felling, cultivating, thinning out, road building and house building. Every ten years the working system is revised, at which time an entirely new forest description is made. In this way it is assured that the forests are able to produce about the same amount of wood continuously, while care may be taken that only such forests are cut down as are suitable for that purpose.

At the end of 1918 the teak woods had an area of about 730.000 H.A., of which 36 % was organized into forest districts.

The cleared forest grounds which are not needed for extending the lands of the population, are at once replanted.

In the course of time various methods of reforestation were followed.

At the present time the forest agricultural system is chiefly practiced, which combines forestry and agriculture and allows the natives to interplant farming crops with the rows of teak. For the purpose of sooner obtaining the desired covering of the ground perennials are interplanted, in which case the improving varieties are used by preference. Chief among these plants is the kemlandingan (*Leucaena glauca*). In other ways, also, attempts are being made to prevent the deterioration of the soil, whereby in the last few years, chiefly through the efforts of the forest experimental station, the planting of mixed crops has made great advancement.

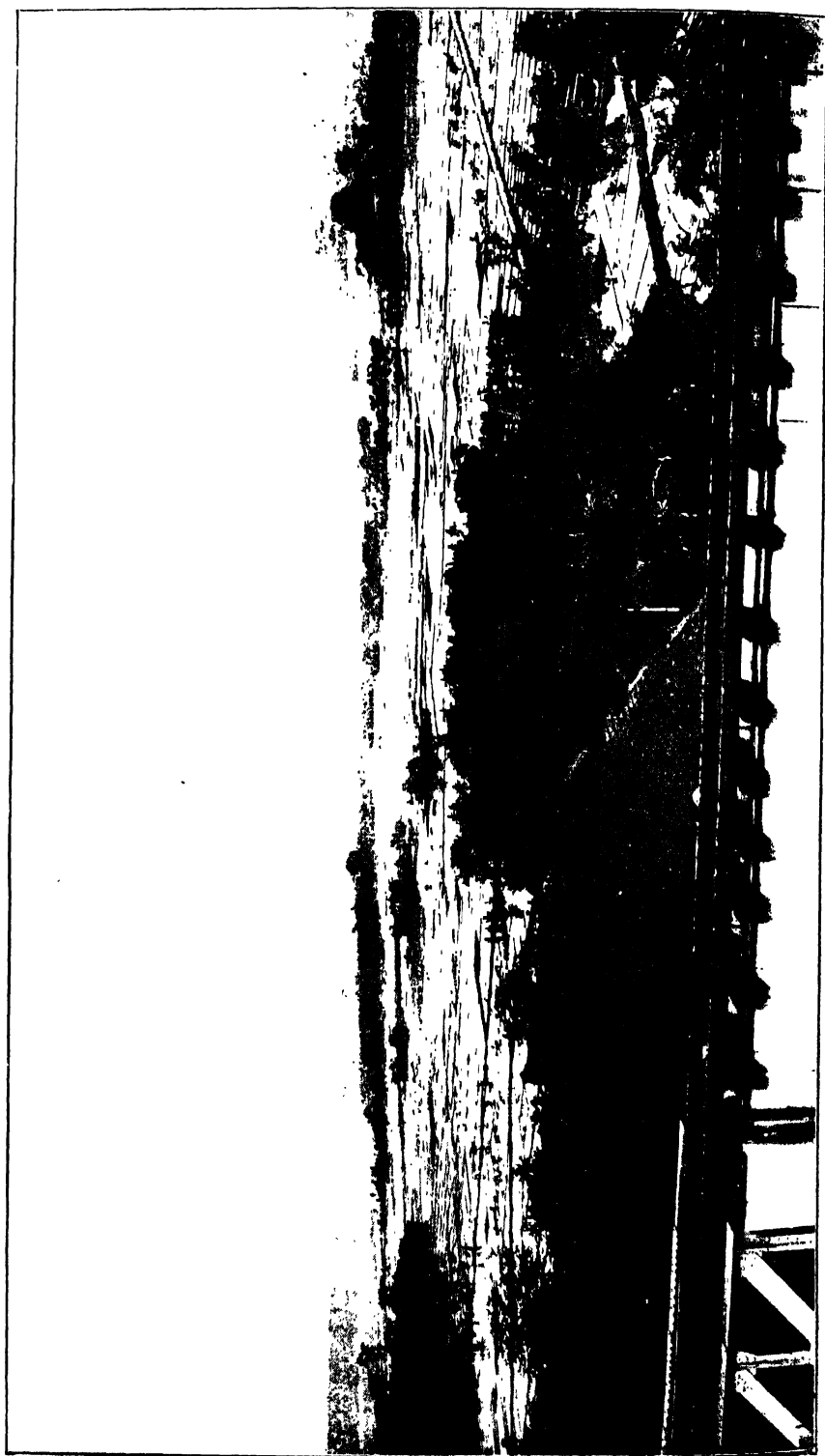
After a period of from five to ten years the first thinning out of the trees takes place; which process must be repeated several times. The wood obtained in this way is particularly adapted for domestic building purposes, and is also used for various industries. The importance of the thinning is increasing every year. Already in 1917, 17,000 cubic metres of wood obtained in this manner were put on the market. Although the forests have been considered ready for felling after from 80 to 120 years, the researches of the experimental station have proved that the most desirable age at which a forest must be cut down is nearer to 80 than 120 years.

The trees are cut by voluntary labour of the natives. The trunks are then sawed into round or square timber, while the remainder is chopped into firewood. For transportation monorails are often used, the cars being pushed by hand. Some years ago, in an extensive forest tract in the Residency of Rembang, the Forestry Service built a system of tramways for which locomotive power is used. All the wood transported over these tracks is gathered up at a central lumber yard in Tjepoe, where it is sold at public auction.

The export of teakwood naturally decreased considerably during the years of the war.

Following are some figures regarding the teakwood area.

Year	Area of teak forest in H. A.			Newly planted areas in H. A. for each year
	Forest districts	Forest sections	Total	
1912	569.315	110.449	679.764	7.390
1913	548.559	137.631	686.190	6.951
1914	545.061	141.312	686.373	6.701
1915	557.769	155.705	713.474	6.501
1916	531.908	189.910	721.818	6.746
1917	510.271	217.127	727.398	7.125
1918	477.251	249.315	726.566	7.362



Year	Production of teak timber in M ³				Production of teak fire-wood in meter stacks	Export of teak timber in M ³
	Total	under control of Forestry Service	by contractors	by irregular exploitation		
1912	247.072	121.152	118.873	7.047	948.527	38.277
1913	269.946	144.678	117.877	7.591	1.176.971	34.971
1914	229.468	136.525	87.168	5.775	1.127.152	28.170
1915	172.719	86.627	80.918	5.174	894.202	17.002
1916	186.202	109.106	75.336	5.760	1.175.580	14.703
1917	261.176	183.678	74.278	5.220	1.531.595	50
1918	218.693	155.768	59.989	2.936	1.228.126	1.185

B. The wild timber forests of Java.

So great is the economic value of teak for Java that all other kinds of wood are classed as wild timber.

The number of these wild timber species in Java amounts to more than 1200. With a few exceptions, such as Casuarina- and bamboo-forests in East Java, the wild timber forests are composed of a great variety of trees. Their composition varies considerably and depends on the climate and the altitude at which they are located. In general the forests vary less when located on a higher elevation. Knowledge regarding the practical value of the various kinds of wild timber is still very incomplete. Botanically, however, in contrast with those of the Outlying Possessions, they are very well known. This is chiefly due to Dr. S. H. Koorders, the forestry botanist, whose work forms a solid basis for further technical and forest researches.

The great importance of the wild timber forests for Java at present lies not so much in the value of the wood as in the hydrologic influence which they possess.

In a country like Java, where the cultures are dependent to so great an extent on a regular water supply in the plains, the influence of the forests is of the greatest importance, since they prevent the water from flowing off too rapidly in the rainy season, while in the dry season the springs continue to provide water.

It is probable that the forests also exert an influence on the climate, but so far this has not been scientifically proved.

It took considerable time before the great hydrologic value of the wild timber woods was realized. Forestry officials had been active for

several years in the teak woods before any attention was paid to the latter. Only when the clearing of land began to be extended higher up the mountain slopes and at the same time the rice fields in the lowlands were continually increased, was it recognized that for the sake of the water supply part of the woods must be left uncleared.

In 1890 were given out the first instructions for a forest reserve. These instructions were very general and are being gradually replaced by more specific directions.

The plans considered within the last few years for utilizing the available water power in Java on a big scale to produce electricity, have still more emphasized the value of the hydrologic forest reserves.

Of the total area of Java, which is 13.000.000 H.A., about 1.300.000 H.A. consisted of forest reserves, at the end of 1918. In these reserves are also included the bare mountain slopes the re-afforestation of which is thought necessary, while various forests belong to it which, though, of no use for hydrologic purposes, are reserved for the sake of the future wood supply.

The unreserved forests and remaining waste lands are destined for the gradual extension of agriculture. At the end of 1918 the area of these amounted to about 900.000 H.A., according to a very average estimate. This area is being diminished every year through new clearings by the natives as well as by the granting of long leases for great agricultural enterprises.

After the reserves have been specified, the grounds are marked out by boundaries which are fixed by means of durable sign posts. This comprehensive work is not yet completed.

The reserved forests are protected as much as possible from damaging influences, while work is constantly being carried on for the afforestation of the bare mountain slopes within the reserves. In this respect East Java is less favorably situated than West Java, largely as a result of the climate which in the eastern part of the island has a more pronounced dry season, so that destructive forest fires much sooner spring up. Furthermore, at the time when the reserves were planned, the clearings in East Java had already reached a greater height than those in the West.

The surest means of re-afforestation is by artificial planting, at least, when this is done by experts. It is, however, very expensive and in view of the vast areas which are considered for replanting, would consume an enormous amount of money. It was soon attempted, therefore, to reach the desired goal by promoting natural re-afforestation. It was found that if the protected area could be guarded against fires and cattle a new tree growth soon began to develop. Especially in West Java, which is damp, very good results are obtained in this way. In East Java, during dry years such as 1918 and '19, it is very difficult to protect the extensive mountain slopes covered with „alang-alang” grass, which easily catches

fire, and often a single fire will undo the results which nature required many years to attain. Besides this care attempts are also made to promote re-afforestation by the making of girdle cultivations and fire ditches, fencing with barbed wire, etc.

When artificial afforestation is begun, the endeavour is made to plant not only varieties of wood which are important from a hydrologic point of view but also those which will later be able to produce a superior timber.

As a result of the ever increasing need of wood in Java, more and more use is made of the wild timber. This wood is obtained partly by importing from outside of Java, the remainder being felled in Java itself. This exploitation is of special importance in West and East Java; in Central Java, where teak wood is easily obtainable, the turnover of wild timber is small.

Part of the wood is cut by the consumers, on permit, the rest being felled under control of the Forestry Service. This felling is of special importance in Besoeki and the Preanger Regencies. In the latter recidency the chief wood cut down is *Rasamala* (*Altingia excelsa*) which in West Java is generally used for building purposes. The exploitation is ordinarily carried out according to a felling up system, in which re-afforestation is left for the most part to nature. In the last few years considerable areas of this variety were brought under cultivation.

In order to exploit the forests in such a way, that they may still serve as a protection, a detailed working plan was made up, by way of experiment, for a tract of 16.000 H.A., located in West Preanger, while for other tracts which are favorably located for transport, similar plans are in course of preparation.

Following are some figures concerning the wild timber forests of Java.

Year	Area of wild timber forest to be reserved in H.A.	Percentage of these marked off at end of year	Total yield of wild timber in Java ¹⁾		Timber felled by Forestry Service	
			Timber in M ³	Firewood in metre stacks	M ³	Metre stacks
1912	998.400	37 %	12.605	88.739	6.295	54.098
1913	1.024.700	43 ..	13.307	66.436	7.230	56.954
1914	1.055.600	46 ..	13.500	113.935	8.482	75.860
1915	1.196.200	51 ..	24.561	94.595	18.977	70.137
1916	1.264.800	52 ..	18.878	97.095	11.290	68.293
1917	1.271.600	56 ..	18.229	147.616	10.496	100.873
1918	1.276.600	59 ..	27.960	150.366	18.500	106.566

¹⁾ No account is taken here of timber cut on private estates and on estates which are being opened long-lease, because no data regarding these are available.

Forest research.

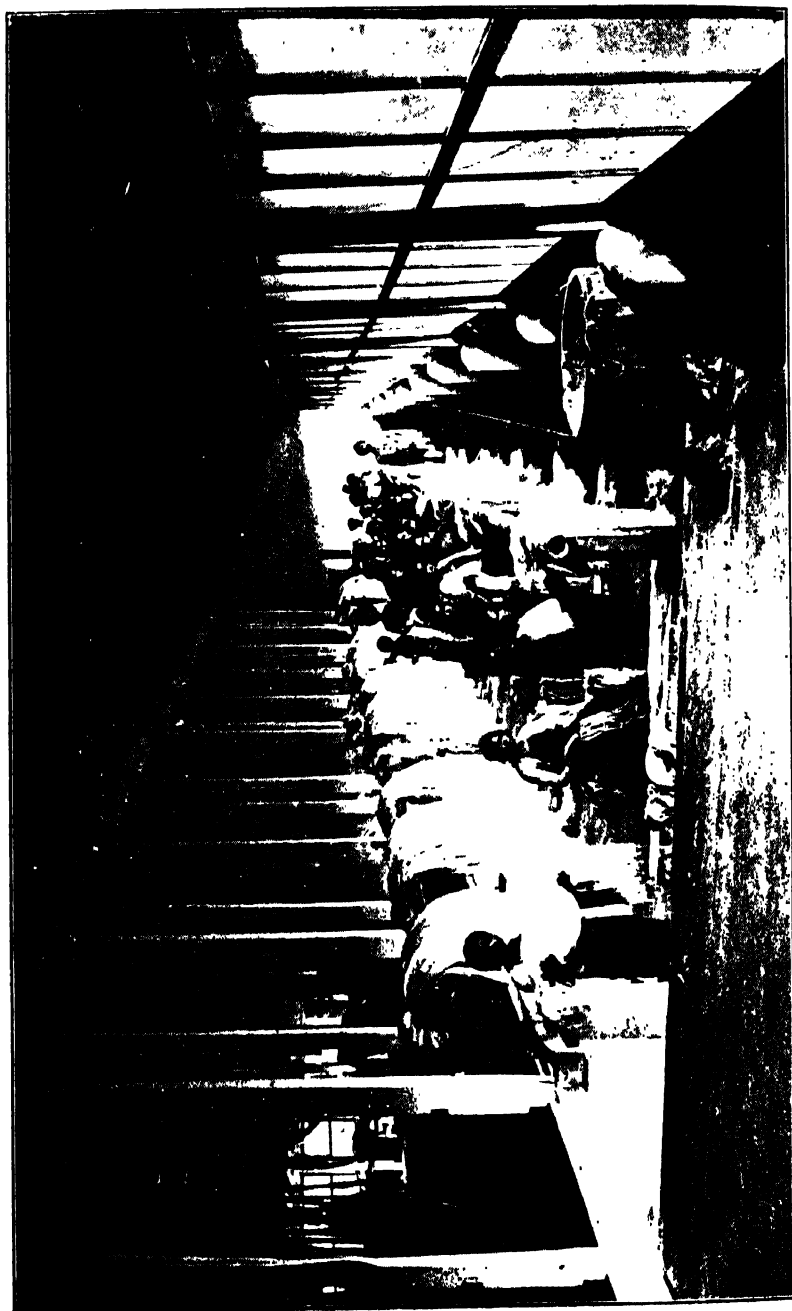
Forest research is carried on at the Experimental Station of the Forestry Service, which was erected in 1913. Beginning with a staff consisting of a technical forestry director and a few assistants, the institution has developed very considerably in the past six years. It is now divided into six divisions, whose task it is to make the following researches:

1. forest maintenance and produce examination,
 2. problems in the field of teak rejuvenescence,
 3. idem of the wild timber industry,
 4. idem of the forest protection,
 5. wood investigation,
 6. botanical-technical forest exploration,
- while plans are being made to establish a division of Statistics in connection with the institution.

The forest maintenance and produce examination aim to create a solid basis for the forest industry, in wood production as well as in money. The first results of this very comprehensive research, for which a considerable number of experimental parks have been constructed and surveyed, are published in „Communications I, II and III of the Experimental Station of the Forestry Service”.

Research of problems in the field of teak rejuvenescence includes the gathering of all forestal data on the teak and its principal companions i.e. those species of wild timber which come under consideration for planting along with the teak or to replace it in certain tracts. In co-operation with the forest managers a great number of experimental plantings were made during the past few years, in various parts of the teak wood area, while in some districts, where the problem of teak rejuvenescence presents special difficulties, measures are being taken to steadily increase experiments by reserving grounds for cultivation and by constructing permanent nurseries. Besides studying the subject of nursery methods, growing conditions and character of the different tree varieties, this division is occupied in Buitenzorg with the examination of various tree seeds, with seed distribution, etc.

The division of wild timber industry carries on the same researches as those mentioned above in connection with the teak forests. The species to be studied are different, however, being from the wild timber forests of the mountains and plains. Some of the most important problems the solution of which is urgent and upon which the attention of the institution is principally fixed are the investigation of woods adapted for various industries, the question of a tanbark supply and the felling up industry in the mountain wild timber forests. For the needs of the first two



Cleaning sisal hemp

grounds for experimental gardens are reserved in forest tracts especially set apart for that purpose, and these already cover a considerable area.

In the field of protecting the forests against damage, pests and diseases, the Forestry Experimental Station studies the damage done by fire and grazing cattle, wind and water, and protection against these, the consequences of insufficient care of the ground and preventative measures against them, the influence of proper continuous protection of devastated and bare tracts, etc. The research of pests and diseases, as far as this lies in the field of entomology and mycology, is now assigned to the Institute of plant diseases. Researches of various forest damages are conducted by the Forest Experimental Station, the results of which are published in Communication IV of the Experimental Station for the Forestry Service.

The Experimental Station also carries on a vigorous research into the character of the vast number of wood species found in the Dutch East-Indies, for which purpose the institution has the necessary apparatus and accessories at its disposal and which, in view of the rapidly developing wild timber exploitation, especially in the Outlying Possessions, is of very great importance. To comply as well with the daily incoming requests for information and with the demands of the trade, to have as soon as possible the disposal of monographs, charts, classifications for practical use and instructions on how to work and preserve the timber, the division in charge of this research must be considerably extended. Plans for this are under consideration.

The botanical-technical forest exploration in the Outlying Possessions has the task of determining the native, commercial and scientific names of the principal wood species, the gathering of authentic material on this subject, the compiling of data regarding their practical utility and durability together with the determining of their values, while in coöperation with the division for forest research, monographs, charts, etc., must be made up. The research is in the first place confined to those areas which come under consideration for forest exploitation. For the present it is limited to some forest tracts in the Residency of Palembang; in the near future it will also be given the task of directing explorations in other regions.

Forestry in the Outlying Possessions.

In the Outlying Possessions vast tracts of forest are still found. Some of these consist of a large variety of trees, while in others one or a few species predominate. Thus in South East Borneo are found forests consisting of over 50 % real ironwood (*Eusideroxylon Zwageri* T et B) and some Dipterocarpaceae, while in South Sumatra at least 7,000 H.A. are found consisting almost entirely of ironwood forests. In other places are forests consisting of more than 80 % camphor trees

(*Dryobalanops Gaertn*) such as Singkel in Atjeh, or where two or three species of *Dipterocarpaceae* form 60% of the whole (for instance, on the island of Simaloer). In Moena are found about 20.000 H.A. of teak forest, for the most part very devastated. The possibility of forest exploitation is of course much increased by the predominance of a few good varieties of wood.

The forests in the areas under direct control belong to the Government, those in the remainder of the selfgoverning communities belong to the various communities. Some of these have given over the administration of their forests to the Government, others manage them themselves, under supervision of Government foresters.

At present there are in the Outlying Possessions 1 Inspector, 11 foresters, 2 assistant foresters and the remaining subaltern staff. Sumatra is divided into 5 service districts, while South East Borneo and the island of Celebes each form one service district.

The activities are confined chiefly to research regarding the location, composition and condition of the forests. For assistance along these lines, a surveying brigade was organized at the end of 1917, which now consists of 1 Chief, 5 chief surveyors and further staff.

In some regions the above activities have already lead to the temporary establishment of forest reserves, while furthermore the regulation of existing exploitations has been taken in hand and the establishing of new private enterprises promoted.

For the provinces Sumatra's West Coast, Sumatra's East Coast Tapanoeli, the Lampongs and Palembang, a rough estimate is made of the forests which are to be reserved, either for reasons of a hydrologic nature or in connection with the future wood supply.

The granting of forests on long terms to private enterprises (the so-called forest concession) is regulated by the Government Decree of August 27 1904, No. 35 („bijblad" 6075). In accordance with this decree forest areas to a maximum of 5000 bahoes (\pm 3.550 H.A.) may be given in concession for 30 years, against payment of a fixed yearly duty per bahoe and a tax per exploited unit of wood.

The concession may be withdrawn if exploitation is not begun within a year after acceptance (Government Decree of January 22, 1914, No. 48, „bijblad" 8025).

Besides these grants on long terms, there is also the concession for felling on short term, which is generally granted by the officials of the Civil Service.

For the provinces Palembang, the Lampongs and the sub-division Singkel of Atjeh were introduced so-called forest protection ordinances in which, among other things, the concession on short term is regulated in detail. Formerly a similar regulation existed in Billiton.

The greatest quantity of the wood exploited in the Outlying Possessions is now always supplied by the fellings on short term, those of the population in South East Borneo and Palembang and the Chinese panglong exploitation in Bengkalis and Riouw being of special importance. Only in recent years has felling on concession begun to develop to a greater extent. The island of Simaloer, on the northwest coast of Sumatra, furnishes the first example of a modernly equipped wholesale industry. This exploitation is carried on by the United Indian Forest Felling Companies. In South East Borneo exploitations on a small scale are conducted by various owners of concessions, under their own management.

A considerable part of the wood exported from the Outlying Possessions is used in Java. Singapore, also, is an important wood market where, among others, an average amount of 250.000 M³, which is yearly felled in Bengkalis and Riouw, is sold at auction.

As increasing markets China (Hongkong and Shanghai), Japan and Australia may also be mentioned.

A large part of the exported timber is supplied by the species belonging to the Dipterocarpaceae family. Besides the export of ordinary timber, mention must also be made of Menadonese ebony (*Diospyros* sp.), sandalwood (*Santalum album* L.) and speckled wood (*Pterocarpus indicus* Willd).

Apart from the point of view of wood supply, the forests in the Outlying Possessions are of great importance on account of the vast quantities of byproducts which they produce. These produce are gathered by the native population and sold to buyers. The most important of these are: rattan, damar, copal, gutta percha and other kinds of gum, tanbark, etc.

Staff and Financial Results.

The following comparison between the number of the staff at the end of 1910 and that at the end of 1918 gives an idea of the considerable advancement which the Forestry Service has made in recent years.

From the record the financial results of the last few years, finally, may be seen the importance of this service from a financial point of view.

Number of officials and functionaries in service at the end of the year:

	1910	1918
Chief inspector.....	1	1
Inspectors and Director of experimental station	5	9
Foresters, assistant and adjunct foresters of the		
1st class.....	74	106
Adjunct foresters of the 2nd class.....	10	—
Chief overseers, overseers and student overseers	155	337
Native guards-forest police	268	494
Forest watchmen,.....	424	774

Financial results of the Forestry Industry

Year	Forestry Service in		Experimental Station	Balance
	Java and Madura	Outlying Possessions		
1912	+ f 3,029.674	+ f 69.990	—	+ f 3,099.664
1913	+ „ 2,968.394	+ „ 126.092	— f 42.698	+ „ 3,051.788
1914	+ „ 2,137.004	+ „ 75.328	— „ 44.506	+ „ 2,167.826
1915	+ „ 2,328.811	+ „ 23.489	— „ 57.382	+ „ 2,294.918
1916	+ „ 2,990.449	— „ 14.550	— „ 78.004	+ „ 2,897.895
1917	+ „ 6,029.317	— „ 100.372	— „ 88.493	+ „ 5,840.452
1918 1)	+ „ 4,961.000	— „ 137.000	— „ 116.000	+ „ 4,708.000

The Government Rubber Industry.

The Forestry Service has already for a number of years been occupied with the cultivation of rubber producing plants. In 1886 the first experiments were made with *Ficus Elastica*, which is indigenous to Java, while in 1900 the cultivation of *Hevea Brasiliensis* was begun. *Castilloa*, *Manihot* and *Funtumia* also received the necessary attention, but the cultivation of these was not continued after it was discovered, that it could lead to no success in Java.

In 1910 the plantings of *Ficus* and *Hevea* had increased to such an extent, that it was thought desirable to establish a separate rubber industry, and in 1919 this was established apart from the Forestry Service.

From the founding of the industry only *Hevea* was planted, for the reason that *Ficus*, through its small production in the plantation industry, had not turned out to be profitable. The planting of the latter, therefore, was also gradually diminished.

Furthermore, in 1913 the cultivation of cocoanuts was begun.

The following figures show the gradual development of the industry, which now consists of 14 rubber and 1 coconut plantation.

1) Previous figures.

	Planted area in H.A.			Rubber production in K.G.	Capital January 1st	Gross profits	Depreciation interest and percentages	Net profits
	Ficus	Hevea	Cocoa-nut	Total				
1910	3,055	596	—	3,651	—	—	—	—
1911	3,055	1,148	—	4,185	598,488.72	55,827	55.152	+ 18,675
1912	2,922	2,175	—	5,095	955,544.62	117,828	66.017	+ 51,811
1913	2,513	3,809	5	6,127	1,564,017.85	28,213	102.567	— 74,154
1914	1,252	5,444	94	6,790	2,208,845.99	108,790	108.790	—
1915	1,162	6,067	214	7,445	2,861,545.80	512,265	512.265	—
1916	1,096	6,553	284	7,915	5,469,721.59	651,972	651.972	—
1917	988	6,998	542	8,528	5,902,975.26	895,844	545.002	+ 548,842
1918	925	8,120	827	9,870	4,987,628.51	429,886	428.525	+ 1,565
1919	—	—	—	—	6,289,817.16	—	—	—

In 1918 only 3074 H.A. of the Hevea plantings (31.1 % of the total area) were in production, half of which were in their first year of production.

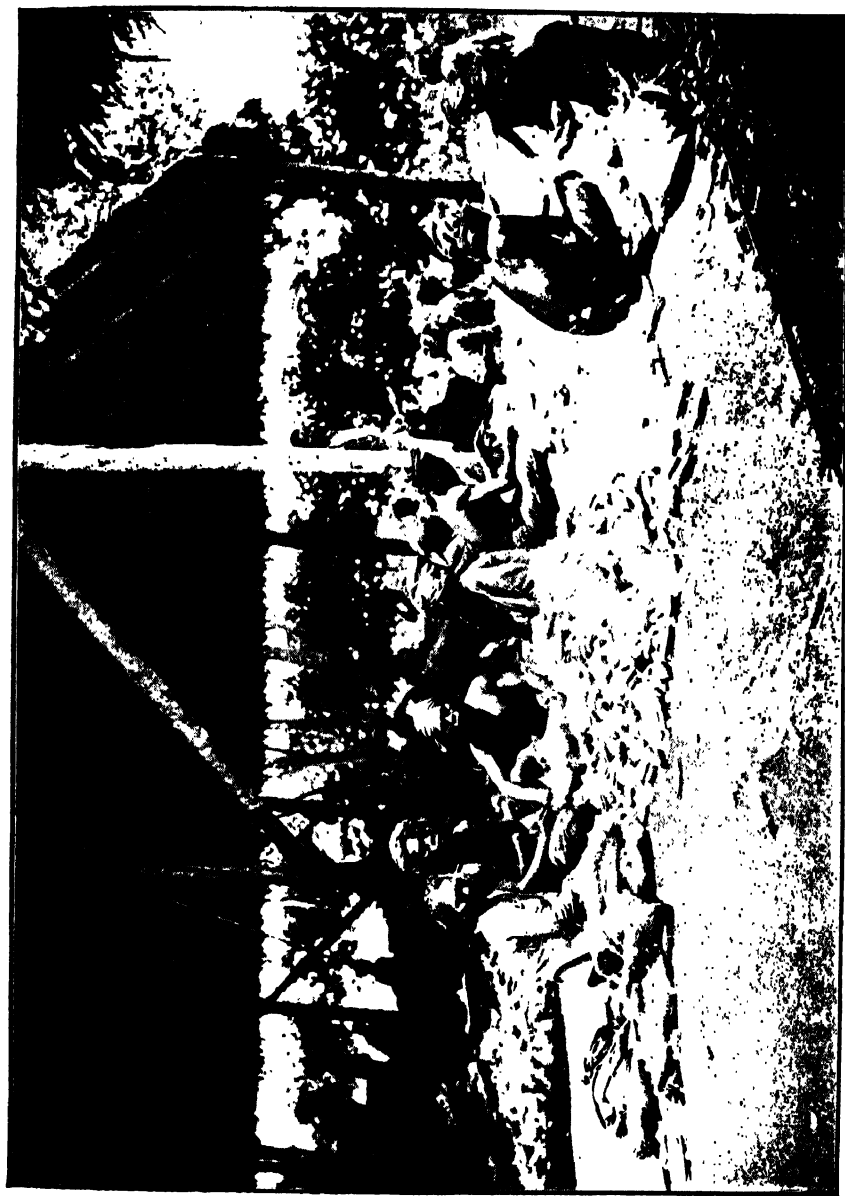
In full production the industry can turn out 4000 tons of rubber.

Of the cocoanut plantings nothing is yet in production.

Besides the rubber industry, much work is being done with aetherial oils, chiefly citronella and lemongrass oil, by catchcrop plantings in the rubber cultivations, while in recent years chenopodium oil, a medicine against hookworm, has been successfully produced.



INDUSTRY



Capoe. The fibre is separated from seeds, bull and pil



CHAPTER IX.

Industry.

In general Dutch East Indian industry is still in the primary stage of its development. Only a few agricultural industries (cane sugar, rubber, tea, quinine, copra products — concerning which some data are given in Chapter VIII —), the oil industry, the tin industry on the islands of Banka and Billiton (for which see particulars in Chapter X) and perhaps, also, a few less extensive industries have assumed such proportions as to be of importance to the world household.

The disturbance caused by the world war in international business, however, caused the industry of more local significance to gain in importance, and many new industries were established, even though at first on a small scale, as a result of this condition.

The continually increasing wages in the great industrial countries, in comparison with which wages in Java have become very low, even when the much smaller labour prestation of the Javanese labourer as compared with that of the European or American is taken into consideration, as well as the want of shipping space and the high prices of shipping freights, which have created an effort to have the raw materials produced in this country improved and manufactured here, and not in Europe or somewhere else, have considerably improved general conditions for a further development of this industry.

The desirability, also, of assuring to the Dutch East Indies at least a minimum of economical independence, as demonstrated by the limited international commercial traffic of the last few years, and the necessity of looking about for new means of income for the population of Java, whose rapid increase make it impossible to increase proportionally the chief means of existence, which is agriculture, have again directed the attention of the Government as well as of private enterprisers to the industrial development of the Dutch East-Indies.

In order to promote this as much as possible, among other things by close co-operation between the Government and private initiative, the Commission for the Development of Industry was created in 1915, which Commission consists of high officials, besides men prominent in the financial and industrial field. A Delegate Member of the Commission has charge of the daily course of affairs and keeps in touch with private enterprises.

For the promotion of this purpose, also, a separate division of Industry was established in 1918, in the Department of Agriculture, Industry & Commerce, whose task it is to give to private enterprisers as complete information as possible along technical as well as economical lines.

To this Division belong various technically trained assistants. It gives, on request, information regarding the source of raw materials, working methods to be pursued, market and labour conditions, etc. It has at its disposal laboratories and workshops, which will soon be considerably increased, where researches are conducted, making it possible for the Division to put its advice on an experimental basis and at the same time to take into account the conditions regarding raw materials, temperature, labour, etc., all of which vary in the tropics.

An experimental station for the ceramic industry started its operations.

Besides the giving of advice it is the task of the Division of Industry to take the initiative in introducing new branches of industry, either with or without co-operation from technical officials of other Departments. The building of factories for the most important chemical semi-manufactures is now in preparation.

Furthermore, the activity of the Government extends to the proffering of manufactory premiums and to financial participation in new industrial enterprises, if necessary.

From the side of private individuals, interest in the industrializing of the Dutch East-Indies has expressed itself, among other ways, in the founding of the union „The Dutch East Indian Industrial Syndicate“, whose purpose it is by general action to look after the interests of the Dutch East Indian industries.

The „Dutch East Indies Annual Fair“ association, founded in 1918, also aims to promote Indian industry by the holding of yearly fairs. In May, 1920, the first Dutch East Indies Annual Fair will be opened at Bandoeng, in a permanent building especially erected for that purpose.

Besides the factory industry, established on a Western basis, the domestic industry of the native population is also a part of the Government's care. To raise this industry gradually to the height necessary for a healthy economical development of the colony is the task of the division of Industry. The organisation of an „outside service“ adapted for this

work, which in many respects will resemble the agricultural information service (see Chapter VIII)—, is in preparation.

A few brief facts regarding some special branches of industry may still be given.

All the raw materials necessary for the machine industry must still be imported from foreign countries, since the steel furnace Industry in South Sumatra is not yet able to produce, owing to difficulties encountered in its installation. Manufacture is limited to small machines and repairs of already existing installations.

The industry is suffering very much for lack of good, skilled labour. Efforts are being made to provide for this want by establishing industrial schools for natives, but the scope of this instruction, which is still in its first stages, is too slight to show any favorable influence on the industry.

The machine manufacturers in Sourabaya have formed the „Union of Machine Manufacturers in the Dutch East-Indies”, by which body efforts are being made to improve the conditions under which the industry is being carried on in this country.

All machine factories produce also what is known as construction work, such as factory buildings, sheds, iron roofs, etc.

Iron foundry is increasing in importance.

Shipbuilding in the Dutch East-Indies, so far as iron ships are concerned, is confined to the Navy Yard at Sourabaya. Here also is felt the importance of skilled workmen, especially with regard to the production of watertight rivetwork. The building of wooden ships is suffering from the ever increasing prices of wood.

Great strides have been made during the past few years in the manufacture of edible oils. Together with this has gone the development of oil-refining, to which the great companies have given their special attention. This manufacturing is increasing to such an extent that it is feared the copra production of India will soon prove insufficient. It is expected, however, that Native oilmaking, by which at present much copra is withheld from the factories, will prove too uneconomical in the long run on account of the very high cocoanutprices, and a transference of the cocanut produce to the wholesale industry is therefore awaited. However, copraproduction must also be increased by the cultivation of cocoanuts, if the world demand for copra and copraproducts is to be satisfied.

In connection with the manufacturing of edible oils, soapmaking is carried on, and already many enterprisers have specialized in this branch, which in the near future will also be run on a more scientific scale.

Fireproof normal-stones and stones of special shape are made in a factory in Rembang. The City of Bandoeng has now its own brick- and

tileworks. The number of these factories, which are under European management, is steadily increasing.

Cardboard is made in a factory in Java. There is also a factory where tincans are made, a paint factory, a factory for broom fibre, etc. Spirits and arak are made from the molasses of the sugar factories.

At Bandoeng there is a factory for preserved food, which, among others, purveys to the army. In Semarang beer of a good quality is brewed.

Tannin-manufacturing is carried on, but will never attain any great development, because superior tanbarks of some difference can not be obtained. Leather tanning will increase in importance in the future by adapting scientific management.

Rope is machinespun in South Sumatra; handspinning is found in some places in Java.

Building materials, such as cement, cement-tiles, mortar, etc., are already made, while factories for artificial marble and pumice cement are being built. Limekilns are increasing in number. A glass factory is being considered.

Sugar factories, tea factories, rice mills, cassava-flour factories etc. are found in great numbers. Cocoa is manufactured into chocolate in various small factories. The manufacturing of essential oils, alcaloids, etc., is steadily increasing in importance.

Cigars and cigarettes are now expertly made in almost all qualities.

Mineralwater, lemonade and ice factories provide for the need created by the warm climate.

A macaroni-factory has been extended.

Besides many small fireworks factories there are the pyrotechnical Workshops and the Romanit Factory.

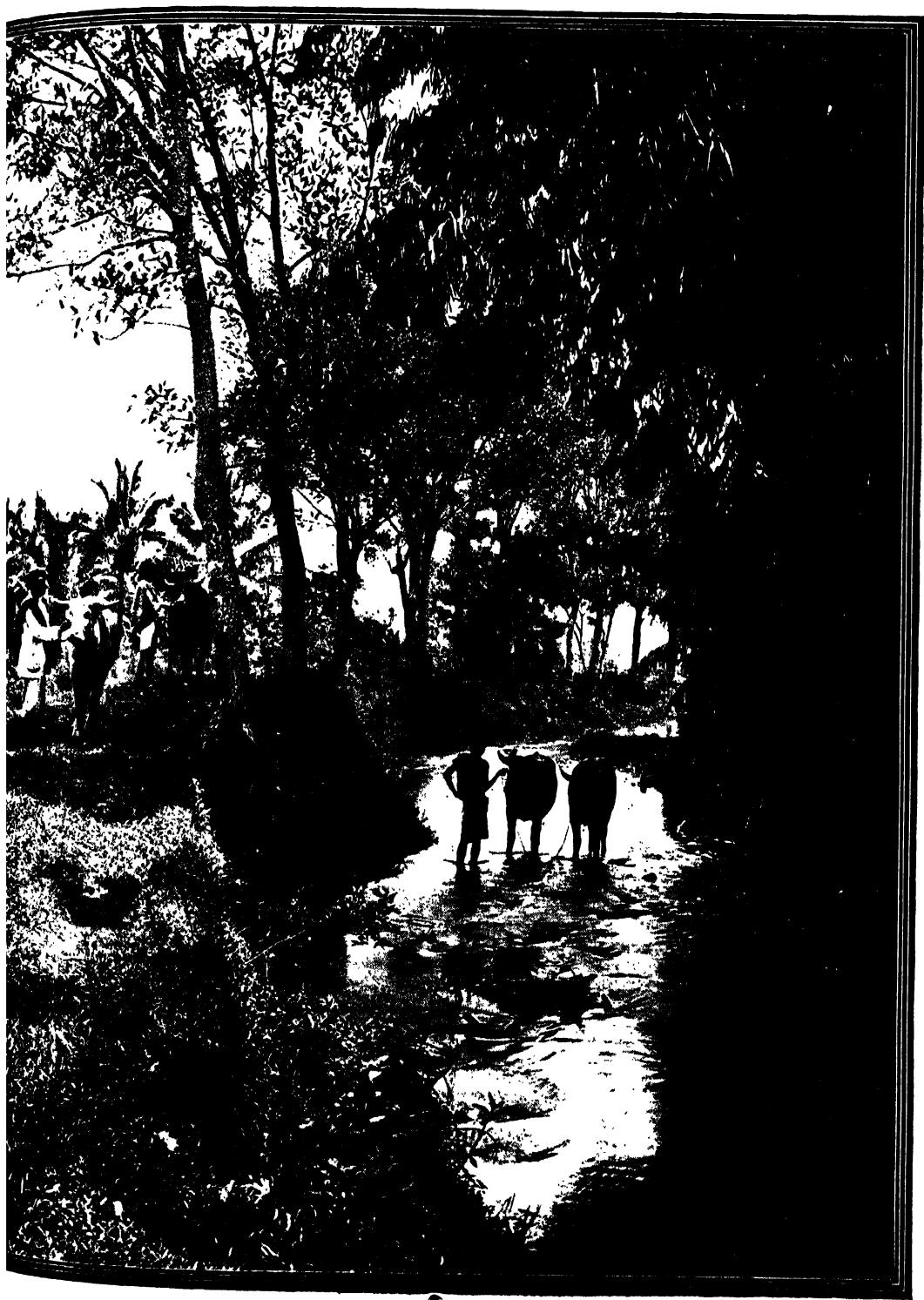
Among chemical products the chief ones manufactured in this country are oxygen, carbonic acid, jodium, sodium bisulphate, sulphur, sulphur carbon, carbide, etc. Opium is manufactured in the Government factory at Batavia.

The woodwork industry has been enriched by several triplex-chest factories.

The number of gas factories is increasing.

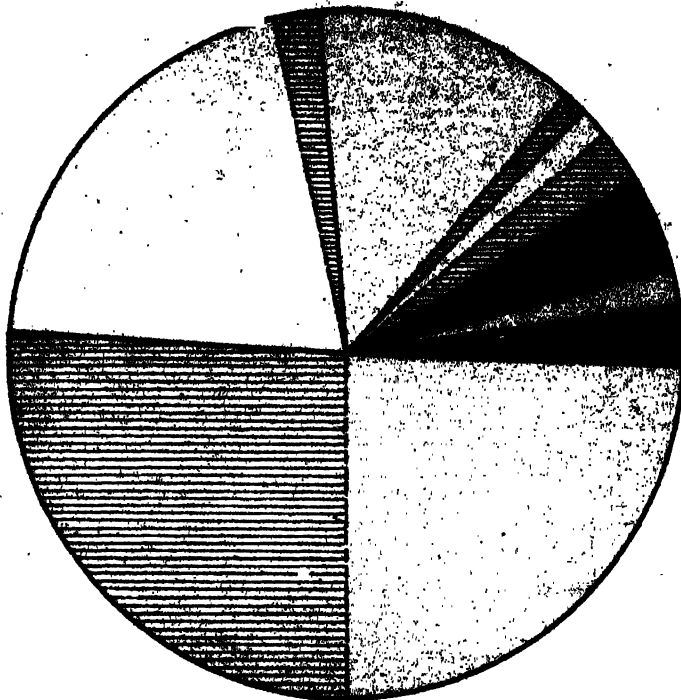
A real textile industry exists only in the prison at Cheribon. Print shops, book-binderies and factories of office-supplies appear capable of continuous extension.










In Bandoeng and in Sourabaya are factories for rubber articles, for which a good future is promised.






ebous bathing

Area of various products in 1919



	Cocoanut
	Rubber
	Coffee
	Tea
	Oilpalm
	Cinchona
	Fibres
	Capoc
	Cocoa

Java

	Cocoanut
	Rubber
	Coffee
	Tea
	Oilpalm
	Cinchona

Outlying Possessions

MINING

General

Tin-Mining by the Government

Private Tin Mines

Coal

Gold-Mining

Other Minerals

Petroleum



CHAPTER X.

Mining.

The mine service includes various activities, i.e., geological surveying, prospecting for useful minerals, carrying on researches of mineralogical and metallurgical nature, locating and sinking wells for drinking water in deep layers, organizing and managing State mining industries and exercising regular legal supervision over private mining enterprises.

The results of the various operations are published in the year-book of the service. The first part is devoted to administrative, technical and statistical data, the second part to scientific essays.

The Government mining industry includes the working of the collieries at Sawah Loentoh, at Tandjong (Sumatra), and at Poeloe Laoet, an island off the south-east coast of Borneo, the working of the tin mines on the island of Banka and of the gold and silver mines in Benkoolen (Sumatra).

Private parties wishing to exploit minerals must obtain a license to prospect and a concession, both subject to certain conditions regarding nationality, duration of the work, government taxes, security, transfer and government supervision, set forth in the Mining Act of 1899, which was revised in 1910 and again in 1919.

According to this latest revision, aside from rights already granted, no more concessions will be granted to private individuals for the so-called: *b* minerals (i. e. anthracite and all kinds of mineral- and brown-coal, petroleum, asphalt, earthwax and all other kinds of bituminous substances, solid as well as liquid and inflammable gases, the latter in so far as they are not of recent date (marsh gases), among which, also, iodine and allied substances are ranged.

The minerals named may henceforth be exploited only by the State itself, or by private parties according to an exploitation contract to be

signed with the Government on the basis of article 54 of the Indian Mining Act (State Gazette 1910 No. 588), which agreement may only be signed by power of attorney fixed by law.

Concessions for the remaining minerals are still granted on the old basis. The working of minerals not mentioned in the mining Act is also bound by a permit.

Connected with the head office of the mining service in Batavia is the mineralogical and geological museum of the East Indian Archipelago, to which anyone interested in the work may obtain admission on application.

Tin-mining by the Government.

The Government tin mines, all of which are situated on the island of Banka, are the outcome of an agreement made for the supply of tin by the old East India Company with the Rajahs of Palembang, who in those days owned the island.

The mining, which probably dates from 1710, was at first carried on by the Malay population. Soon, however, the Chinese took the industry in hand, in 1820 it was placed under European control by the Dutch East Indian Government and since 1852 has been supervised by mining engineers trained in Europe. Originally these engineers were entrusted only with the topographical, geological and mineralogical survey of the island, but they have since been put in charge of the actual mining and smelting operations. They have introduced important improvements in the construction of smelting furnaces, the drainage of the open pits and the stripping of the overburden, so that the tin industry at Banka is now entirely up to date and making use of the latest technical inventions. Moreover, during the past few years the tin has been subjected to a chemical test, before being exported, so that the Banka stamp guarantees the quality of the product.

The island has an area of 12,240 square K.M. and extends over a length of 100 nautical miles. Most of the mines are situated on the north-east side of the island.

The ore is worked almost exclusively in open pits, which are found in the alluvial deposits of many riverbeds and in the alluvial strata on the slopes of small hills. Tin mining, therefore, can not be regarded in the same sense as mining, which is usually considered as subterranean industry.

The strata from which the ore is obtained are from 0.1—0.4 M. in thickness, although in exceptional cases they are several metres.



The ore is first cleaned in washditches and is then generally smelted by each mine in its own smelting house by means of simple blast furnaces. In some districts there is a central smelting house for all the mines. It is planned to establish one central smelting furnace for all Banka.

The work is still done by Chinese coolies and is partly contracted for and partly carried out under the Government's own management.

In the latter case the usual manual labour is made use of as well as machinery. In the year of report, 1918, 6.94 % of the total production of tin was obtained under Government supervision.

The average number of labourers (contract coolies) in the year of report, 1918, amounted to 18,658. Of the 13,330 labourers who had completed their contracts, about 15 % returned to their own country.

Those sent back are accompanied by an official and a doctor.

In the above year the condition of health among the coolies was good. About 3.07 % were treated in the hospitals. Owing to the nature of the work, sickness was chiefly due to malaria and skin disease.

The death rate amounted to 3.04 %, but 1.66 % of this was due to influenza.

Very good results have been obtained by providing the coolies with unpolished rice by which berri-berri, a disease very prevalent in former years, is being gradually wiped out.

At the present time there are nine hospitals.

Since 1914 Banka tin has been sold almost exclusively in the Dutch East-Indies. The tin is sold underhand in Batavia, while a small part is supplied to various branches of service in Holland and the East-Indies.

Following are some figures regarding the tin industry in Banka.

	Num- ber of mines	Average number of labourers	Production in tons of 1000 K.G.	Quantity of tin auctioned in Holland in 1000 K.G.	Quantity of tin sold in D.E.I. in 1000 K.G.	Cost price of the auctioned tin per picol in Glds. ¹⁾	Average selling price in Glds.		Net receipts of the auctioned tin in Glds.	Net profits of the industry in Glds.
							In Holland	In D.E.I.		
1910	361	19,823	16,686	13,840	—	40.—	114	—	24,520,953	—
1911	366	21,292	15,471	15,358	—	39.—	142	—	33,967,966	25,940,397
1912	376	22,296	15,116	16,329	—	43.—	154	—	39,387,606	30,323,600
1913	362	21,436	15,752	15,390	—	45.—	152	—	36,566,674	25,219,074
1914	342	21,406	14,477	9,857	2,278	43.50	127	108	23,639,743	15,327,535
1915	381	19,050	15,497	2,475	11,855	41.50	142	111	25,736,416	16,580,948
1916	355	19,628	14,808	1,148	20,458	42.25	144	121	42,661,029	27,885,229
1917	326	18,910	13,777	856	11,527	43.99	175	156	32,861,326	24,039,131
1918	325	18,658	12,055	36	10,934	58.97	228	204	56,277,380	25,803,489

¹⁾ Freight and selling costs included

Private Tin Mines

The chief private enterprise is that of the „Billiton Maatschappij” which works the tin in the island of Billiton.

In 1852 a concession was granted to the Billiton Maatschappij, and in 1892 was extended for a further period of thirty-five years. In the new agreement it is stipulated, that five-eighths of the yearly profits shall go to the Government.

The geological formation and the occurrence of the ore are almost similar to those in Banka. In Billiton, however, there are also found veins of ore, which are rich enough to be worked.

As in Banka, the work is done by Chinese kongsies working under contract while the industry is organised along the same lines. In 1918 thirty mines were being worked.

Another private enterprise is the Singkep Tin Company, to which a concession was granted in 1889 on the island of that name in the Rhiau Archipelago.

The occurrence of the ore is similar to that in Banka and Billiton and the mines are worked according to almost the same system. In the hills are also found tunnel constructions.

Near Singkep tin ore is also found at the bottom of the sea, where it is worked by means of dredgers. The mud which is brought to the surface is put through a preliminary concentration on board and is then further worked on shore. The Singkep ore is smelted in Singapore.

Following are some statistics regarding both these companies.

Year of report	Billiton Company		Singkep Company
	Production in tons (1000 K.G.)	Share of profits paid to D.E.I. Government in Glds.	Production in tons (1000 K.G.)
1910	4.334	2.286.961	405
1911	4.665	1.858.775	469
1912	4.158	1.938.062	635
1913	4.453	} 819.184 ¹⁾	672
1914	4.614		834
1915	5.256	881.949	816
1916	5.954	2.541.804	844
1917	6.492	3.927.374	770
1918	6.945	5.689.538	514

¹⁾ The year of report 1913-1914 for the Billiton Company runs until December 31st, 1914; since January 1st, 1915 it co-incides with the calendar year.

Coal.

There are now three enterprises by the Government: the Ombilin mines, the mine at Poeloe Laoet and the Boekit-Asem mines.

Ombilin mines.

The Ombilin mines are situated near Sawah Loento in the Padang Highlands, a region very famous for its beautiful scenery. Mining was begun in 1892.

For transport a railway 156 K.M. in length was constructed. Owing to the mountainous nature of the country parts of the track are on the cogwheel system.

The coal field extends for 10 K.M. in length and has a breadth of 9 K.M. The thickness of the seams varies, but is usually very great, some seams being as much as 25 M.

The quantity of coal is estimated at \pm 200.000.000 metric tons, of which a total of 7.291.425 tons was extracted from 1892 to 1919.

The coal burns easily with a large, clear flame and only small quantities of ash and cinders.

The mines so far have been worked entirely by means of tunnel construction together with the use of all kinds of modern technical machinery.

Formerly the greater part of the production was sold to private buyers (in 1913 80 %, in 1914 76 % of the total output), but during the war years, on account of the stagnation of foreign shipping, the Government public services were supplied in increasing measure; in 1916: 28 %, in 1917: 47.5 %, in 1918: 48.62 %.

The coal sold to private buyers is partly taken in at Emmahaven as bunker coal, partly shipped as freight coal to some place where it is sold as bunker coal. In 1918 it was shipped to Tandjong Priok, Sabang, Sourabaya and Macassar.

In order to provide for the need of coal which existed in the Archipelago during the war years, production was run up as high as possible and as far as available means permitted.

The labourers are for a large part convicts undergoing penal servitude (natives and those holding the same rights, convicted for some crime).

At the end of 1918 their number amounted to 3,377, out of a total of 7,650 labourers.

On account of the continuous changing of these people, who must always be trained anew, the individual labour prestation of this class of labourers is naturally smaller than that of steady contract labourers and free working men. Favourable results are generally obtained by making contracts with released convicts who have a record for good conduct during their penal term.

The condition of health is generally more unfavourable among the convict labourers, since they are more susceptible to disease. The mortality resulting from sickness amounted to 0 $\frac{0}{100}$ among the contract labourers and 17.5 $\frac{0}{100}$ among the convicts.

The death rate resulting from accidents amounted to a total of 2.65 $\frac{0}{100}$ in 1914, against 1.59 $\frac{0}{100}$ in 1917 and 0.74 $\frac{0}{100}$ in 1918.

In 1918 no work was carried on at the coal brick factory, since there was a sufficient demand for fine sifted coal.

Following are some figures relating to the Government coal mining industry.

	Production in tons (1000 K.G.)	Book value of the enterprise in Glds.	Receipts in Glds.	Working ex- penses in Glds.	Net profits af- ter deducting share paid to the Sumatra R.R. in Glds.
1910	387,522	5,159,951	5,520,240	5,142,145	578,094
1911	406,595	5,094,027	5,609,018	5,250,924	558,094
1912	407,452	5,251,704	5,614,208	5,276,068	538,140
1913	411,071	5,735,090	5,678,158	5,509,051	569,087
1914	445,141	4,054,604	4,104,689	5,604,954	538,909 ¹⁾
1915	455,141	4,784,514	4,201,051	5,557,059	482,162
1916	505,566	5,240,685	4,578,969	5,781,792	591,084
1917	508,226	4,264,762 ²⁾	4,647,051	5,970,515	507,252
1918	504,201	4,595,055	7,029,595	6,570,174	659,151 ³⁾

Poeloe Laoet.

On the island of Poeloe Laoet, off the south-east coast of Borneo, a colliery has been worked by the Government since October 1st, 1915.

The whole island is reserved by the Government for the purposes of mining and geological research.

The centre of the mining industry is at Stagen, which is connected with the harbour of Stagen by a railway five kilometres long.

The mining is carried on in two strata.

The proposed extension of the mines could not be carried out immediately, because of war conditions.

The island is favourably situated for the sale of the product, being in the direct route of the shipping lines between South Africa, Australia, Java, Macassar, China and Japan.

¹⁾ f 160,826 in interest was for the first time in 1914 deducted from the profit.

²⁾ Diminished with the book value of the Emmahaven establishment to the amount of f 1,401,050,75.

³⁾ A share in the profits is no longer given to the Sumatra Railroad.

In 1918 162 ships called at Stagen.

In the year of report 96.606 tons of coal were shipped, of which 25.4 % was delivered to private parties and 74.6 % to Government services and industries.

The work is chiefly done by Javanese contract coolies, the average strength of which in 1918 amounted to 2639. An average of 5.53 % were treated in the hospitals, while the death rate was 2.50 % of which 2.24 % from disease. The high death rate is a result of the prevalence of influenza and cholera.

The production which, from 1907 to October, 1915, amounted to 902,294 tons, was in 1915 126.885 tons, in 1914 128.505 tons, in 1915 117.710 tons, in 1915 124.105 tons, in 1917 120.834 tons, and in 1918 121.421 tons.

Boekit Asen collieries.

This third Government coal mine is situated near the doesoen Tandjoeng, 12 K. M. south-west of Mocara Enim in the Residency of Palembang.

For a long time it was known by various explorers that coal was to be found in the highlands of this province.

Originally little attention was paid to this fact because the mineral was brown-coal. By the proximity of volcanic rock (andesiet), however, the coal is here and there improved.

In the geological research of 1915 it appeared that great quantities of this improved coal were present near Tandjoeng.

Stoking tests gave favourable results, so that in connection with the existing coal shortage in the Dutch East-Indies and also to supply the Government railroads in their need of fuel, it was decided to work one mine on a small scale by way of experiment. The work was confined to day labour in the day-seams of the so-called Mangoes strata. The coal produced was transported from Tandjoeng to Mocara Enim on a tramway, constructed in a short time by the Government railway service and after being transloaded into the cars of the South Sumatra Government Railway, brought to Palembang (Kertapati).

The refined coal is found in three layers, the upper so-called *Mangoes* layer, consisting of two banks 6 and 7 metres in thickness intersected by a tuff layer from 4 to 5 metres thick, the middle so-called *Soeban* layer consisting of two banks of 6 and 3 metres intersected by a stratum of clay 2 metres thick and the lower so-called *Petai* layer from 5 to 6 metres thick. The layers are mutually separated by marl-slate and sandstone 20 metres thick between the Mangoes and Soeban layers and 20 metres thick between the Soeban and Petai layers. A fourth layer also occurs, i.e. the *Merapi* layer, at a depth of about 100 metres below the Petai layer.

The coal is very pure, containing not more than 3 % of ashes, mostly 1-2 %, but some sorts show an inclination to become crushed. After an optional contract had been closed for the eventual taking over of the Lematang concessions situated in this region, these concessions and the adjacent grounds were investigated.

The result of this investigation was, that in the year 1919 the concession was taken over by the Government.

The mining is principally limited to day labour in the Mangoes layer, the Soeban layer being worked for the first time in 1919. At present the coal is mined in three qualities: I, a highly refined coal with about 8000 calories heat value, II, a coal less freed from gas and water and which therefore shows a greater solidity of from 6000 to 7000 calories, III, a sort which is poorly refined and can not stand long storage of about 6200 calories.

The production amounted to 9764 tons in 1917 and in 1918 to 50.500 tons, while in 1919 more than 100.000 tons will be obtained.

Measures are now being taken for the construction of a colliery on a large scale.

Government Gold-Mining in Benkoolen.

A mineralogical geological research instituted by the Government proved the existence of two gold and silver deposits capable of being developed: Tambang Sawah and Lebong Simpang, both located in the division Lebong in the Residency of Benkoolen.

The Tambang Sawah deposit contains chiefly manganesebearing silver ore, which will be worked according to a process discovered by the engineer Caron.

Because of war conditions the necessary tests on a large scale could only be made in America, where they took place in the station for metallurgical research in Denver, with the co-operation and instruction of Professor Clevenger of the United States Bureau of Mines. The necessary machines were then ordered.

The delivery and erection of these installations are now being actively carried on.

During the time when the tests were being made, preliminary measures were already being taken on the location, while a road connecting the mine with the principal town of Mocara Aman was built by the service of the State Public Works.

By the service of Waterpower and Electricity an electric waterpower station was built at Tais to supply the mine with current. This powerhouse also has accomodation for supplying more power to the Redjang Lebong mine.

The machinery necessary for working the ore at Lebong Simpang is now being installed. The power will be supplied by a small waterpower station.

Private gold-mining. Other minerals.

From ancient times the East Indian islands have had the reputation of being rich in gold, Java included, though this is the only island where no gold mines are found, the metal being discovered only sporadically.

At the end of the last century private enterprise led to the discovery of a number of places where gold existed, the result of which was that several companies were formed for exploration and a few concessions, which did not turn out to be very profitable. The record of these companies on the whole has been unfavourable, but gradually sounder conditions have arisen.

Gold is found in Sumatra, Borneo and Celebes in all kinds of deposits, such as beach and alluvial deposits, tertiary gravel beds and as vein deposits.

By the end of 1918 54 concessions had been granted for the mining of gold and silver.

The mining of the gravel beds so far has been of small importance and the dredging companies, also, have met with little success. Natives are employed in the washing of river sediment.

The more important mining companies confine themselves exclusively to the working of vein deposits.

The greatest quantity of gold is produced in the province of Benkoolen in Sumatra, where two mines are at present in working. The province West Coast of Sumatra, on the other hand, produces by far the most silver.

The mining area, known by the name of the Lebong district (Lebong mine), lies about 75 K.M. north of the capital and harbour of Benkoolen.

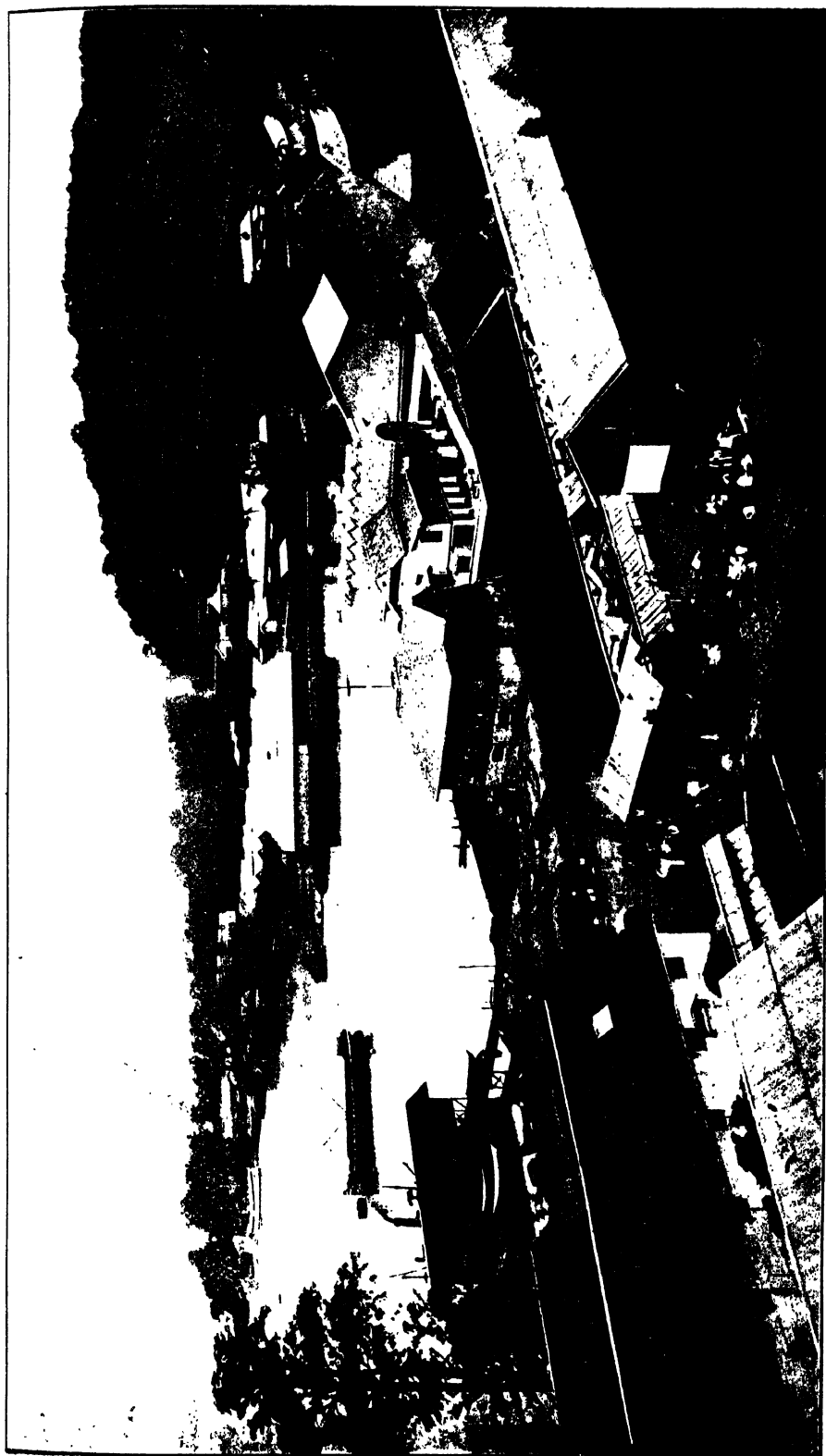
The veins sometimes extend as far as 4 K.M. Waterpower is everywhere available for the working of the ore.

Another gold-mining district is to be found in the northern peninsula of Celebes, which, however, so far has failed to live up to expectations. At the present time there are three mines in working.

A third gold centre is located in Central Sumatra near Padang, where the mines have been producing since 1913.

Silver mining in the Archipelago is not an independent industry, being taken from the ore together with gold. The mines worked on the West Coast of Sumatra produce chiefly silver.

Among the other minerals found in the Dutch East-Indies, besides petroleum, mention must also be made of iodine, wolframite, manganese ore, sulphur and copper ore, and also diamonds in Borneo.



Petroleum-industry Balıkesir

These mines are worked exclusively by private enterprise. Various springs in East Java produce iodine, which is shipped to Europe in the form of copper iodide. In 1915 the production amounted to 60.5 tons of 1000 K.G., in 1916 to 33 tons and in 1917 to 15.4 tons.

Wolframite, manganese and sulphur are obtained in small quantities. The amounts of sulphur produced in 1911, 1912, 1913 and 1914, respectively, were 875, 305, 1.236 and 300 tons (1000 K.G.), while in the years 1915 up to and including 1918 only a very small amount was obtained.

Marble quarries are found in Java, from which the stone is worked into tiles, among other things. In 1918 the production amounted to 5.500 M².

There are also a number of lime kilns and manufacturies for building materials. Near Padang a Portland Cement factory has been established since 1911. In 1913 178.043 barrels of cement were produced, in 1914 213.483, in 1915 196.171, in 1916 229.923 and in 1917 204.264, which found a ready market. The factory has been enlarged with a second installation.

The results of the diamond digging in the Archipelago suffered under war conditions in the second part of 1914. The greatest number of diamonds is found in the district of Martapoera in the South and East Division of Borneo.

The number of licences granted for diamond digging amounted in 1918 to 13.000 against 6.956 in 1917, 9.000 in 1916, 5.623 in 1915, 2.379 in 1914, 8.120 in 1913 and 6.049 in 1912.

Gold and silver production in Netherlands India in K.G.

	Gold K.G.	Value in Glds. ¹⁾	Silver K.G.	Value in Glds.	Value of dia- mond produc- tion in Glds.
1910	4.847	7.935.913	15.977	666.952	—
1911	4.236	7.505.381	15.831	684.027	47.627
1912	4.002	6.594.120	14.258	697.125	52.518
1913	3.865	6.369.198	17.212	827.176	66.807
1914	3.503	5.772.941	32.555	1.434.229	48.762
1915	4.052	6.671.167	41.653	1.661.959	50.958
1916	3.814	6.285.631	37.516	1.980.967	77.613
1917	3.893	6.415.257	34.014	2.225.920	51.300
1918	2.971 ²⁾	4.896.906	28.626 ²⁾	2.220.206	116.360

¹⁾ In calculating the value the gold value is taken at f 1648.— per K.G., while the silver value is calculated at the average market price in New York, which amounted in 1914 to \$ 0.5481, in 1915 to \$ 0.49684, in 1916 to \$ 0.6566, in 1917 to \$ 0.81417 and in 1918 to \$ 0.96772 per ounce or respectively to f 44,055, f 39.90, f 52.77, f 65.44 and f 78.12 per K.G.

²⁾ Preliminary figure.

Petroleum.

The development of the petroleum industry in the Dutch East-Indies is of comparatively recent date. The first concession was granted in 1880 in Lankat (North Sumatra) and has since been followed by several more.

At the end of 1918 the number of concessions granted and sanctioned by the Dutch East Indian Government amounted to respectively 61 and 26, of the latter 15 especially for petroleum and other bituminous substances.

The chief centres of production are located in the provinces:

South and East Division of Borneo,

Palembang,

Acheen and Dependencies,

East Coast of Sumatra,

Rembang,

Sourabaya,

Amboina (the island of Ceram).

The products obtained from the crude oil are, among others: benzine, kerosene, residue or liquid fuel, lubricating oil, asphalt, paraffin wax, from which candles and battik wax are also manufactured.

The oil from the various districts differs in appearance and composition, so that it can be worked into a large variety of products.

The Sumatra oil, for instance, produces benzine, kerosene and lubricating oil, while the heavier Borneo oil yields kerosene, oil fuel and paraffin wax.

Benzine is put on the market in two grades: light and heavy. That obtained from Sumatra is of the best quality. Great quantities are shipped to Europe.

Kerosene or illuminating oil finds its chief market in Java, in British India, China, Japan, Australia, and East Africa. Alexandria is the most western market.

Turpine. This product serves as a substitute for turpentine.

Diesel and Solar Oil form intermediary products between kerosene and lubricating oil.

Liquid Fuel or petroleum residue is used as fuel in the refineries, while large quantities are shipped to different parts of the world.

Batching Oil finds a market in British India in the jute industry, where it is used to soften the fibres and make them supple during the process of weaving.

Lubricating Oil. A modern plant for the distillation of engine oil is being constructed at Balikpapan, while there are two working in Java and Sumatra.

Paraffin wax. The paraffin factories in Java and Borneo put a large quantity of the finest paraffin wax on the market. The one at Balikpapan is one of the largest and best equipped in the world.

A part of the wax is used for the manufacture of candles which, on account of the high melting point of the Borneo paraffin, are particularly suitable for use in the tropics. The factory in Java provides for local consumption, the one at Balikpapan for export.

Battik wax finds a market in Java in the domestic battik industry.

Asphalt is sold partly on the local market and the remainder abroad.

A large fleet of tank steamers carries the products to all parts of the world. The greater part is shipped in bulk, but various ways of packing are also used, for which purpose the tin factories supply the material.

Petroleum Companies.

The principal company, which controls almost the whole manufacture and output in the Dutch East-Indies, though known under different names, is the „Royal Dutch Company for exploiting petroleum wells in the Netherlands Indies” (Koninklijke Nederlandsche Mij tot exploitatie van petroleumbronnen in Ned.-Indië), which was founded in 1890.

Gradually this Company made connections with various other companies for the buying of the crude product, its shipping and distribution, with the aim of securing for itself a place in the world market. Beyond the Dutch East-Indies, also, it is steadily extending its sphere of activity for that purpose.

In 1907 the Company was reorganized and several new companies came into being, namely:

- a. the Bataafsche Petroleum-Mij., affiliated to the Royal Dutch,
- b. the Anglo-Saxon Petroleum Company, affiliated to the Shell Transport and Trading Company,
- c. the Asiatic Petroleum Company.

The Bataafsche Petroleum Mij. obtains the crude oil at the producing centres outside of Java and manufactures the products.

The Anglo-Saxon Petroleum Company ships and transports them, while the Asiatic Petroleum Company has charge of the distribution and sale outside the Dutch East-Indies.

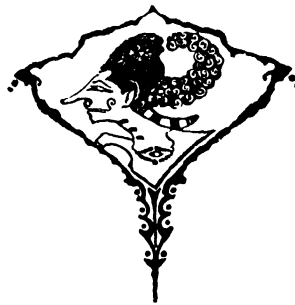
Inside the Dutch Indies this is handled by the Dordt Petroleum Company, which also obtains the crude oil in Java and manufactures the products.

The Royal Petroleum Company presents an example of a widebranched organisation, which has made it possible to bring the petroleum industry in the Dutch East-Indies to a high degree of perfection.

Following are some figures regarding the production and export in this country.

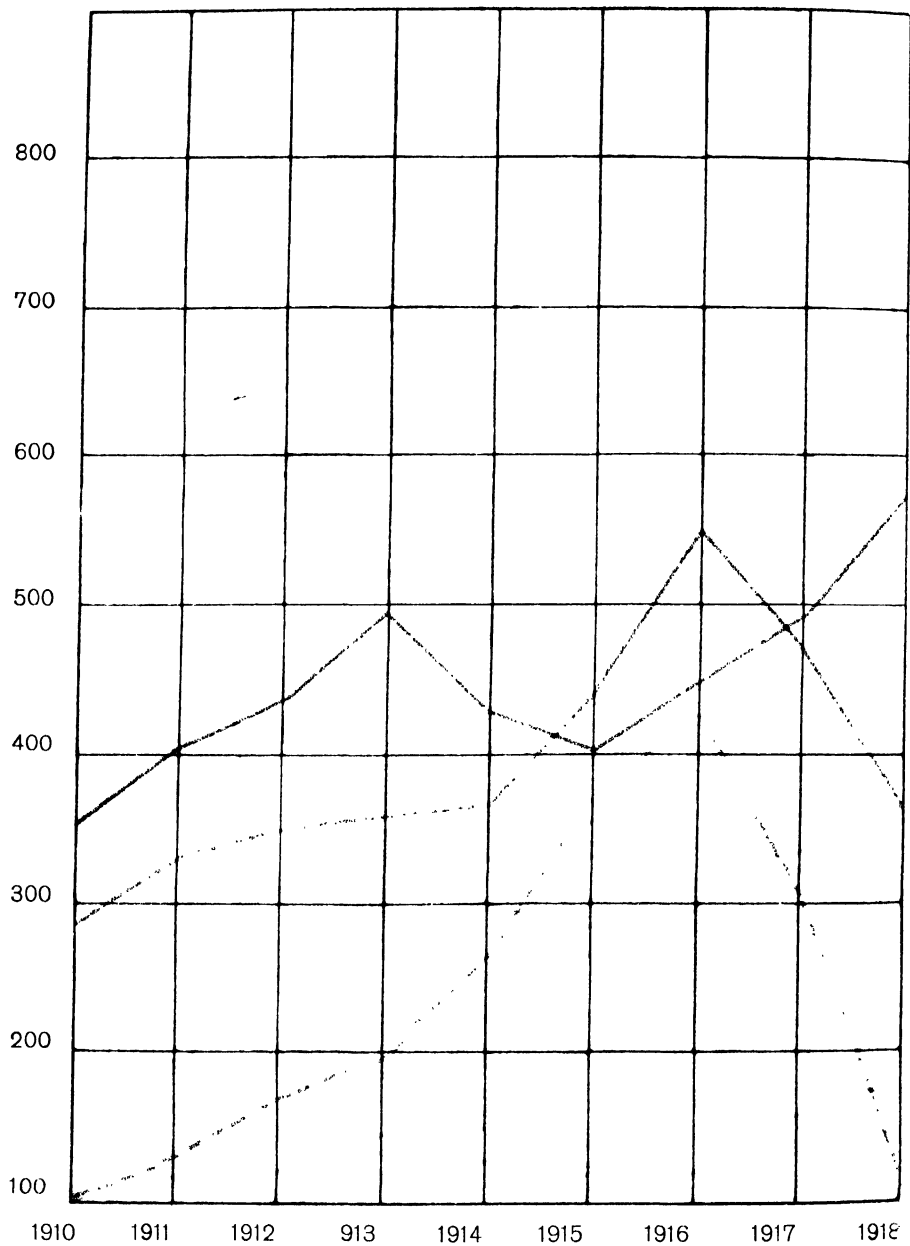
	Production of crude oil in D.E.I. in tons	Export of petroleum products in 1000 L.			
		Benzine and gasoline	Kerosene	Residue	Turpina
1910	1.501.045	311.615	489.819	83.962	—
1911	1.670.545	248.352	557.668	67.641	—
1912	1.519.395	386.921	483.906	202.047	275
1913	1.525.899	354.406	466.529	149.279	338
1914	1.569.216	315.430	465.462	205.379	795
1915	1.645.443	368.344	467.203	347.895	877
1916	1.750.184	477.731	328.168	326.074	660
1917	1.790.610	455.191	324.719	155.541	1.452
1918	1.764.205	317.075	379.044	291.057	2.556

Export (in tons of 1000 K.G.) of:					
	Paraffinwax	Candles	Lubricating oil	Asphalt	Greases
1910	7.536	1.522	—	—	—
1911	14.402	1.141	—	—	—
1912	15.375	1.424	11.018	150	—
1913	12.589	2.440	15.702	606	141
1914	9.091	2.844	16.747	179	116
1915	18.172	2.026	21.414	102	91
1916	20.006	1.949	24.812	572	175
1917	22.566	2.961	13.501	1.646	261
1918	21.045	4.080	24.529	1.719	252



Value of imports and exports during the years 1910—1918

in millions of guilders



exports Netherlands India
imports " "
exports Java
imports " "
exports Outlying Possessions
imports " "
excedent exports Neth. India

COMMERCE

Trademarks



CHAPTER XI.

Commerce.

The importance of the Dutch East-Indies as a producer of raw materials and semi-manufactures for the world market is increasing every year, while as a result of the increasing development of these regions, the import also is becoming steadily greater.

Like other producers of tropical products the Dutch East-Indies have also been strongly affected by the world war during the past few years, as clearly shown by the following statistics.

The following statement gives an idea of the value of imports and exports by private parties:

Year	In millions of guilders	
	Imports	Exports
1898	172	204
1908	264	454
1913	462	627
1918	557	676

The increasing importance of the Dutch East-Indies as a producer and consumer has attracted much attention, especially in the last few years, and the number of foreign commercial firms which have their own representatives here is becoming steadily greater.

The Government, also, is doing a great deal to give more publicity to the Colonies in this respect and to call attention to the various advantages which the Dutch East-Indies have to offer.

In several countries (the United States, Australia, South Africa and Japan) sample rooms are established, while in some European countries these permanent exhibitions are in course of preparation.

A close connection is maintained with the official business representation of other countries, while the Dutch consular officials take care to compile such data as they consider of value to the Colony.

In recent years, also, the Dutch East-Indies have systematically taken part in the most important exhibitions in foreign countries.

The trade in products raised by the native population is transacted chiefly through the medium of buyers, generally Chinese or Arabs, who often assure themselves of the crops by means of payments in advance. They in turn sell to the European dealers.

Direct export or import through non-Europeans takes place, also, and is even increasing, but as yet it is of comparatively small importance.

For the safeguarding of mutual interests, the trade has founded organisations called Commercial Unions, which are established in the principal cities: Batavia, Bandoong, Semarang, Sourabaya, Macassar, Padang and Medan.

The Government, also, has founded so-called Chambers of Commerce and Industry, which in Java consist of seven members and of five in the Outlying Possessions. These are established in Batavia, Semarang, Sourabaya, Macassar and Padang.

As a Central Government organ, whose task it is to inform the Government in all matters with which it should be acquainted in order to adopt a policy conducive to the general welfare, so far as commerce is concerned the Department of Agriculture, Industry & Commerce has been established at Buitenzorg, and more especially the Department of Commerce.

Besides a weekly periodical, this Department publishes statistical market reports, extensive annual reports, lists of importers and exporters in the Dutch East-Indies, etc.

The following data give some information regarding trade in the principal products and articles.

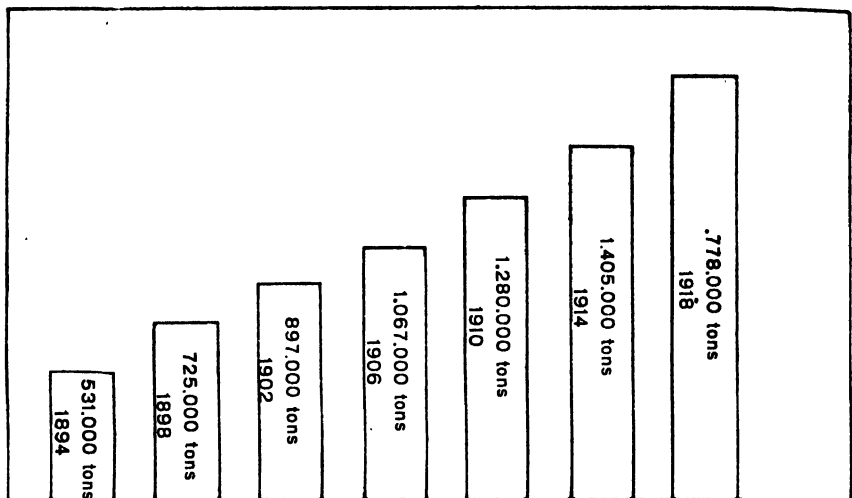
Sugar is the chief product exported from this Colony. The quantities exported (in 1000 K.G.) amounted to:

in 1910	1.304.625
„ 1913	1.471.423
„ 1917	1.263.104
„ 1918	1.574.201

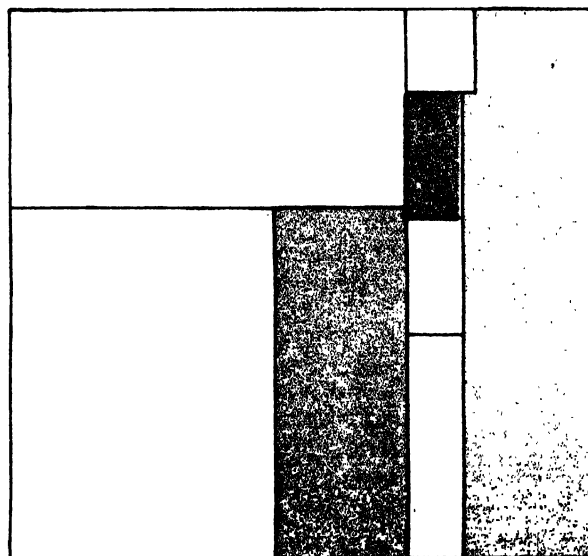
In the course of time great changes have taken place with regard to the destination of these quantities. In 1874 about 37 % of the Java sugar was shipped to Holland, while the inferior qualities found their way to England and Asia; from 1895 to 1902 the greater part of the production went to the United States. From 1902 to 1914 East Asia and Australia were the principal buyers; in the war years, 1915 up to and including 1917, Europe (chiefly England) and British India bought the biggest part of the first runnings, while in 1918 China and Japan again came to the fore in this respect.









Until 1917 *tea* was exported chiefly to Holland, England and Russia, but as a result of the war, during the last two years the United States and Australia have had the greater part of this export.

Sugar production in Java



World's production of cane-sugar in 1918



- | | | | |
|---|------------------------|---|------------------------|
|  | <i>Cuba</i> |  | <i>Philippines</i> |
|  | <i>British India</i> |  | <i>Australia</i> |
|  | <i>Java</i> |  | <i>Mauritius</i> |
|  | <i>Japan + Formosa</i> |  | <i>Other Countries</i> |

The exports have been as follows (in 1000 K.G.):

in 1910	15.338
„ 1913	26.548
„ 1917	38.010
„ 1918	30.452

The export of *rubber* from the Dutch East-Indies has increased considerably since 1910 and the area planted with Hevea has been much extended during the past few years.

The amount exported was (in 1000 K.G.):

in 1910	2.788
„ 1913	7.134
„ 1917	45.925
„ 1918	44.096

Before the breaking out of the war, the export of this product was chiefly to England and Holland, but during the war years the United States became more and more the greatest market. Thus in 1917 about 80% of the export from Java and about 55% from that of the Outlying Possessions was shipped direct to the American Union.

The amount of *coffee* exported (in 1000 K.G.) amounted to:

in 1910	15.831
„ 1913	28.939
„ 1917	16.724
„ 1918	7.357

Export was made chiefly to Holland, though in the last few years Australia and Japan have begun to take a greater interest in this product.

The export of *tobacco* increased up to 1913, but decreased considerably in the following years as a result of stagnation in the shipping traffic with Holland, which is the principal market for this product. During the war years the United States and also Australia, British India, France, Scandinavia, etc., appeared as buyers, but the quantities exported to these countries could not compensate for the loss of the Dutch market.

The exports were (in 1000 K.G.):

in 1910	62.855
„ 1913	87.832
„ 1917	12.857
„ 1918	8.050

Trade in *copra* also decreased gradually during the war years, but the reduced export of this product was the result not only of the unfavourable influences of the war, but was due partly to the quick development which the cocoanut-oil industry underwent in this country during those years.

The quantity of copra exported (in 1000 K.G.) amounted to:

in 1910	248.331
„ 1913	229.339
„ 1917	116.770
„ 1918	68.578

while that of cocoanut oil was (in 1000 L):

in 1910	1.707
„ 1913	1.682
„ 1917	30.665
„ 1918	33.237

To the principal export products of this Colony belongs also *pepper* which is chiefly put on the market in two qualities, white and black. The black pepper originates mostly from the Lampong Districts, the white pepper from Muntok.

The total exports of pepper were (in 1000 K.G.):

in 1910	26.189
„ 1913	18.965
„ 1917	28.016
„ 1918	25.899

This product, which until 1914 was shipped chiefly to the Netherlands, found its way in later years mostly to the United States.

The exports of *cassava* products (tapioca flour, flake, pearl, residue and dried roots) steadily increased in importance until 1913, but in connection with political conditions, were considerably smaller in the following years (with the exception, however, of 1915 and 1916) as may be observed from the following figures (quantities in 1000 K.G.):

in 1910	45.624
„ 1913	105.532
„ 1917	69.745
„ 1918	28.129

The greatest markets for these products are usually the United States and England.

A very important export product of this Colony, also, is *tin*, of which the following quantities were shipped (in 1000 K.G.):

in 1910	18.021
„ 1913	27.645
„ 1917	15.812
„ 1918	11.584

Export to the United States increased continuously during the last years, so much that in 1917-1918 the American Union formed practically the only market.

Special mention should also be made of *kapoc*. Export (in 1000 K.G.) amounted to:

in 1910	9.186
„ 1913	10.145
„ 1917	11.959
„ 1918	9.255

The principal countries of destination are: the United States, Australia and England.

The exported quantities of some other products of importance to the trade of the Dutch East-Indies were:

Products	Measure	1910	1913	1917	1918
Peruvian bark	1000 K.G.	7.800	9.011	.885	2.440
Quinine salts		119	75	150	
Skins		7.952	7.266	.742	.250
Coca		462	1.581	298	662
Damar		9.808	9.994	10.267	.747
Copal		7.259	7.080	5.955	5.626
Arachides		21.555	20.141	10.860	8.080
Cocoa		2.527	2.292	1.610	.885
Gambir		7.529	8.975	6.270	5.918
Nutmegs		2.580	5.118	.947	2.588
Rattan		44.190	60.559	.005	25.441
Pinangnuts		27.224	26.005	.428	51.407
Fibres (except kapoc) . .		10.055	21.566	.192	19.696
Wood, teak	1000 M ³ .	65	59		
Petroleum	1000 L.	489.819	466.529	524.719	579.044

With regard to the import trade at present, mention must first be made of *soft-goods*. The value of the goods, included under this heading, amounted to:

in 1910	£ 67.468.000
„ 1913	„ 112.557.000
„ 1917	„ 97.989.000
„ 1918	„ 115.287.000

The rise of the import value in 1918 was a consequence of the higher prices resulting from war conditions and affecting not only these, but all other articles.

In normal times the import which ranks next in importance is that of *rice* which article of food originates from British India, Indo-China and

Siam, but the export from these producing countries being tied up more and more during the war years, as a result of the food shortage, and finally altogether prohibited, rice as an imported article has quite lost its significance.

With the extension and development of agriculture and other branches of industry, the import of *machinery and steam engines* increased, so far at least as this was not made impossible during the last years by war conditions. The values of these imports were:

in 1910	f 12.285.000
„ 1913	„ 30.180.000
„ 1917	„ 7.147.000
„ 1918	„ 7.814.000

The value of imports of *iron and steel, hardware* have increased very much:

in 1910	f 25.366.000
„ 1913	„ 42.031.000
„ 1917	„ 34.343.000
„ 1918	„ 41.334.000

The imports of *foodstuffs* (all kinds) had a value of:

in 1910	f 29.605.000
„ 1913	„ 30.583.000
„ 1917	„ 25.733.000
„ 1918	„ 22.687.000

while that of all kinds of *earthenware* represented a value of:

in 1910	f 3.120.000
„ 1913	„ 5.718.000
„ 1917	„ 3.074.000
„ 1918	„ 3.641.000

The value of some other imported articles is given below (in 1000 glds.)

Articles	1910	1913	1917	1918
Cement	2.303	3.974	4.530	7.350
Glass and glassware . .	1.745	2.597	1.768	2.455
Haberdashery	5.024	8.005	4.590	5.259
Artificial manures . . .	7.894	11.870	15.786	25.865
Artificial dyes	345	1.262	3.324	2.745
Lamps	993	1.791	1.105	780
Matches	2.643	3.659	3.578	6.818
Coal	3.778	4.745	6.007	7.058
Gunny sacks	4.082	6.263	9.674	8.685
Soap	1.250	2.346	3.480	3.705

It should be mentioned, also, that while in former years the European countries were the chief purveyors of most of these articles, during the years of the war Japan, the United States and Australia came to the fore in this role.

Trademarks.

The registration of trade- and factorymarks was fixed by the Royal Decree of August 29th, 1912, No. 57 (Indian Official Gazette 1912, No. 545) the so-called Trademark Decree, revised by the Official Gazettes of 1914, No. 15, 1915, Nos. 275 and 300 and 1916, No. 637. Registration takes place at the Branch Office of the Industrial Property Bureau (Binnen-nieuwpoortstraat, Batavia) a sub-division of the Department of Agriculture, Industry & Commerce.

In order to obtain a registration the applicant sends to the Branch Office a document in duplicate, signed, sealed and written in Dutch, containing the applicant's name and place of residence, besides a domicile chosen within Netherlands Indian territory, where the applicant is a foreigner, followed by a clear picture of the trademark and finally a list of the goods, on which it is desired to be used.

Moreover, a cut must be sent in, with a length and breadth of at least 1.5 c.M., and of 10 c.M. at the most, and a thickness of 2.4 c.M., with which the whole trademark can be printed in one colour. For the registration of any trademark the amount of f 10.— is charged. If a colour or a colourcombination is a distinct characteristic of the trademark, these must also be mentioned in the description and six loose coloured copies of the trademark sent in. The cut, however, in this case, also, must be made so that with it impressions of the trademark can be made in only one colour.

The Chief of the Branch Office can refuse the registration of a trademark on the following grounds:

- a. where the trademark resembles entirely or in the main another, already registered, or already sent in for registration by another party for the same class of goods;
 - b. where the trademark contains immoral representations, or those, by which the use of the trademark would be detrimental to the public peace.
- The trademark may not contain, besides, the coat of arms or the seal of a Public Association, even when it has been slightly changed.

If the registration of a trademark is refused, the applicant may appeal to the Court of Justice (Raad van Justitie) in Batavia within three months, with a request to order the registration.

When the trademark has been registered, it is published in the *Javasche Courant*.

A trademark already registered may be canceled at the request of a third party:

- a.* in cases where the trademark resembles wholly or in the main another to which any other party is entitled for the same class of goods;
- b.* in cases where it contains the name of a firm, to which any other party is entitled.

An application for cancelling must be sent in to the Court of Justice at Batavia, within nine months after the trademark has been published in the *Javasche Courant*.

An application for the canceling of a registration can be sent in the ordinary legal way to the Court of Justice at Batavia; on the basis of previous use of the trademark, in case not more than three years have elapsed since it was last used.

The validity of a registration expires after twenty years, unless it is renewed before that time. For a renewal the same formalities must be observed as for the first registration.



MEANS OF COMMUNICATION

Roads and Bridges

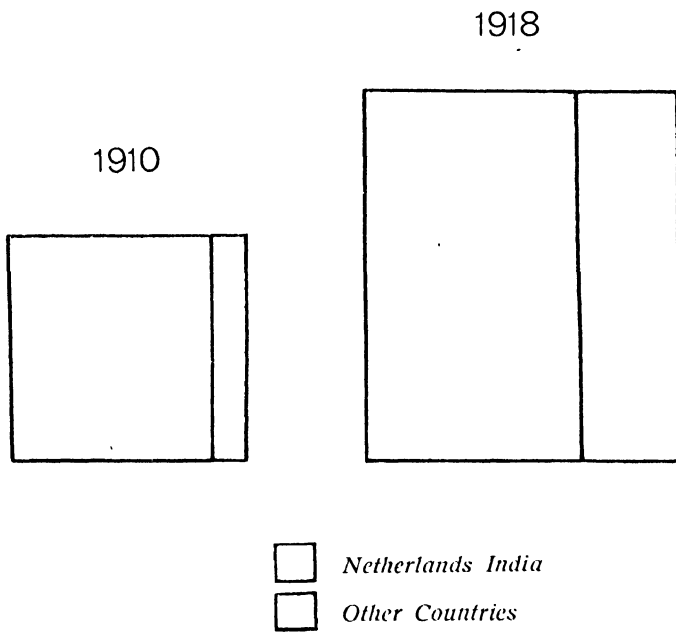
Railways and Trams. Automobile Services

Waterpower and Electricity

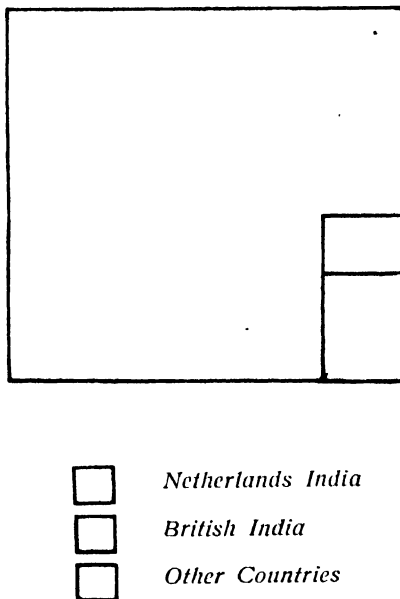
Shipping

Postal, Telegraph and Telephone Service

World's acreage of estate rubber



World's production of cinchonabark in 1918





CHAPTER XII.

Roads and bridges.

In Java is found a network of good and well kept roads.

Besides the considerable amount of transport on the railroads the traffic on roads is very heavy in this rapidly developing island. Especially since the introducing of automobiles it has been continuously increasing. Improvement and extension of the present system of roads, according to the requirements of this ever increasing transport, is a matter to which constant care is devoted by the authorities. The construction and upkeep of municipal roads was formerly entirely in the hands of the Central Government, but, since the decentralization of administration has been introduced, their improvement is under local management, and the carrying out of provincial road plans (see underneath) is more and more being entrusted to the provincial councils. It is planned in 1927 to let the provincial councils have entire charge of the plans for provincial roads.

In the meantime, however, the Central Government controls the carrying out of the so-called General Road Plan for Java. This plan includes the construction and improvement of the two main roads through the entire length of Java (the northern and the southern main road) with five cross branches. The costs are estimated at a total of f 5.637.000, of which about half has already been spent on the work.

The provincial road plans fit in with this general scheme. To carry out the plans for these roads, which are supposed to be completed in ten years, and which according to a preliminary estimate will call for an expenditure of 24 million guilders, the sum of f 985.000.— had been spent by the end of 1918.

The road system in the Outlying Possessions, from the nature of things, has not by any means attained the same extent as that in Java. Formerly construction in these parts was exclusively in the hands of the Civil Service officials, who carried out the work chiefly by the aid of

statute labour and as a rule had not very many technical appliances at their disposal. The result was that local and provincial roads and systems were constructed, but little attention was paid to any communication between one province and another.

After the institution of a service for the inspection of roads in the Outlying Possessions in 1908, however, the possibility was opened here also, to obtain a more vigorous and systematic construction.

At present this construction is being carried on more intensively in Sumatra than elsewhere. The General Road Plan adopted for this island and the connections proposed in the course of the last few years as a supplement to this plan, contain together a number of 54 roads, with a total length of 4600 K.M., the construction costs of which are estimated at \pm 63 million guilders.

At the end of 1918, 9 roads were completed and 17 were in course of construction, while at that time an amount of \pm f 15.630.000.— had already been spent.

The object of these roads is not only to establish a connection between those already existing, but also to give access to remote districts which have either been sufficiently developed to warrant the construction of a road or where more intensive cultivation may be expected when a better means of communication has been opened up.

Besides the connections already existing between Padang — Medan and Benkoolen — Palembang other transversal main roads will be constructed which will connect with roads running north and south. These will be made suitable for automobil traffic and will connect, wherever possible with railroads and navigable rivers.

Efforts are also being made to improve the means of communication by rendering the rivers more navigable. This work was also formerly entrusted to Civil Service officials, but now a number of these improvements are under the supervision of experts.

In other parts of the Outlying Possessions, also, the authorities are paying more attention to the construction of roads.

In Borneo where, up to the present time, the rivers have been almost exclusively the means of communication with the interior, two separate roadplans are now in course of preparation, i.e. for the province South East Division of Borneo.

For North Celebes (Minahassa) a plan has been made, which is already being carried out, and which aims to improve thoroughly the connections now existing to a total length of \pm 500 K. M. The costs of this plan are estimated at \pm 5 million guilders, of which at the end of 1918 f 480.000. had already been spent.

Among other roads in South Celebes, one is being constructed 126 K.M. in length, between Maros and Watampone, while the main road

running along the coast is being gradually adapted for continuous speed traffic.

In the island of Bali may be mentioned the two main roads running from north to south between Singaradja and Denpasar, the construction and improvement of which have already been partly taken in hand.

In the other islands, also, which have not been mentioned, new roads are constantly being constructed and the old ones improved.

Besides what is being done under Government control and at its expense, important work for the improvement of traffic is being carried on by various selfgoverning communities in the Outlying Possessions, some with financial support from the Government.

Among such works are, for instance, the Central Timor road, \pm 280 K.M. in length, running from Timor Koepang to Atapoepoe on the island of Timor, and the road construction in the selfgoverning communities of South Celebes, Sumbawa, Sumba and Flores.

Following is a review of the amounts which have been spent in the last few years for extraordinary upkeep and renewal as well as construction by the Government of the Dutch East-Indies.

Construction and renewal of roads and bridges.

	Java and Madura	Outlying Possessions	Total
1914	f 1.147.054	f 3.861.199	f 5.008.253
1915	„ 1.093.143	„ 3.163.655	„ 4.256.798
1916	„ 1.402.234	„ 3.542.962	„ 4.945.196
1917	„ 1.938.014	„ 3.843.346	„ 5.781.360
1918	„ 1.738.587	„ 3.889.580	„ 5.628.167

Railways and Trams. Automobile Services.

The management of the Government railways and trams, as well as the handling of all affairs concerning the railways and trams in general, belong to the sphere of activity of the Department of Government Enterprises.

To handle these affairs the Department has at its disposal the main offices of two separate services, i. e.

1. the Service of Railway and Tram Supervision and
2. the Service of State Railways and Trams.

The first named service includes:

- a. the general and daily supervision of the construction and the exploiting of all general traffic rail- and tramways, which are not being constructed or exploited by the State;
- b. daily supervision to see that all prescriptions and regulations ordained by the authorities and all conditions of concessions are fulfilled, the control of the practising of tariffs and conditions of transportation and of the service of the rail- and tramways indicated under sub *a*, and
- c. the general supervision of the state rail- and tramways.

For the supervision mentioned under sub *a*, *b* and *c* three inspection divisions are established: the division West and Central Java, the division East Java and Madura and the division Outlying Possessions. At the head of each division is a chief engineer.

At the head of the entire service of supervision is a superior official with the title: Chief Inspector of Railroads and Tramways.

The service mentioned under sub 2 includes: the general management of the surveying, construction, equipment and running of the State Railways and Trams.

The management of the service is by a Board of Directors, consisting of three persons at the most. If the management is given to one person, he has the title of Chief of the service.

1. State rail- and tramways.

The first railway which was constructed by the State, ran from Sourabaya to Pasoeroean and Malang. The section Sourabaya-Pasoeroean, 63 K.M. long, was the first to be exploited and was opened to public traffic on May 16th, 1878.

Since that date the net of state railways has been steadily increased and at the end of 1919 the following total was in exploitation:

In Java: 2509 K.M. of standard gauge lines with a gauge of 1,067 M. and 104 K.M. of narrow gauge lines with a gauge of 0,60 M.

In Sumatra: on Sumatra's West Coast 245 K.M. of standard gauge lines with a gauge as above.

In South Sumatra 242 K.M. of standard gauge with a gauge as above.

In Acheen and Dependencies 512 K.M. of narrow gauge lines with a gauge of 0.75 M.

Especially since 1906 the State railway industry has developed considerably, as clearly shown by the following figures, in which are not included those concerning the exploitation in South Sumatra and in Acheen.



	1906	1914	1917
Cost of construction. K.M. exploited	f 178.386.442	f 234.495.886	f 275.134.866
(average)	2.119	2.557	2.836
Gross revenues	„ 16.506.198	„ 34.714.830	„ 44.019.653
Working expenses (including renovation, repair of extraordinary damage and written off capital)	„ 9.745.895	„ 19.543.195	„ 23.478.923
Net receipts.	„ 6.760.303	„ 15.171.635	„ 20.540.730
Staff) European . .	1.480	2.535	3.302
) Native	1)	18.509	21.629
Passengers — K.M.	512.090.589	1.105.765.121	1.455.775.018
Tons — K.M.	251.611.815	489.850.374	642.291.224
Number of engines. .	424	513	530
„ „ carriages	975	1.589	1.714
„ „ wagons .	5.858	10.094	11.038

1) Not completely known

The extraordinary way in which these railways have flourished is largely due to the change in the management of the State railways and trams which was effected in 1906. In that year the management was given to a special branch of service, the above mentioned Service of State Rail- and Tramways, which made it possible to run the enterprise in a more effective and systematic way.

The activities in behalf of the State railways and trams are now divided into nine branches of service i.e.:

1. the administrative service,
2. the service of roads and works,
3. the service of traction; simple lines,
4. the service of traffic and business affairs,
5. the service of tramways and automobiles
6. the service of surveying,
7. the service of construction,
8. the service of construction and bridge building,

9. the service of extension and architectural affairs, while a technical bureau of supplies is also a part of the industry.

It is the task of the service of construction and bridge building to see that all technical structures which are built fulfill the latest requirements, that they are controlled according to the latest methods of calculation, and that they are only built from materials which have proved their good quality. This service must also judge the various types of engines by which traffic may take place (in simple as well as in double traction) on certain construction works.

The three main parts into which the activities of the State railways and trams may be divided are:

- 1st. surveying and other preliminary work;
- 2nd. construction;
- 3rd. exploitation.

Ad 1^o. The rail- and tramway investigation and surveying are regularly continued.

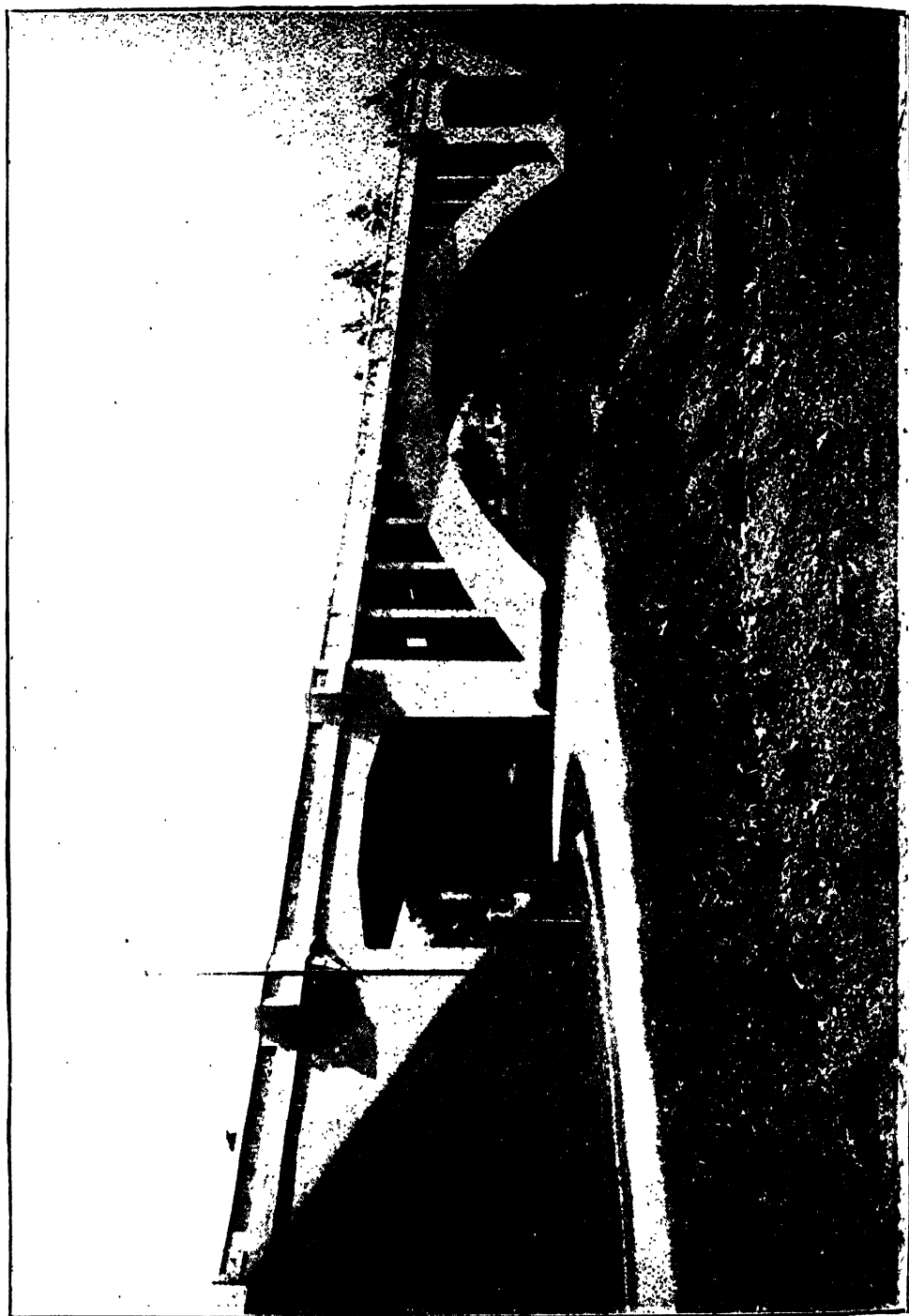
During 1918 the following lines were being investigated or surveyed:

- I. In Java:
 1. Garoet—Tjikadjang.
 2. Tramways in North Cheribon.
 3. Tramways in the Southern part of the division of Bandoong.
 4. Extension of State tramways in the residency of Madioen.
 5. Lines in South Bantam.
 6. Buitenzorg—Penjawoengan.
 7. Tangerang—Serang.
- II. In the Outlying Possessions:
 1. Sibolga via Batang Toroe to Padang Sidempoean (Tapanoeli)
 2. Soengai Limau—Loeboek Basoeng (Sumatra's West Coast).
 3. Macassar—Takalar
 4. Macassar—Tanete—Seenkang
 5. Kottaboemi—Batoeradja.
 6. Moeara Enim—Lahat.
 7. Lahat—Tebingtinggi—Kapalatjoeroep.

} Celebes.

Ad 2^o. In that year the following lines were being built:

- I. In Java:
 1. Bandjar—Parigi (2nd tract, 40,324 K.M. long)
 2. Rogodjampi—Kalisetail.
 3. Krawang—Lemahabang.
 4. Djatinangor—Tjitali.
 5. Bandoong—Koppo.
 6. Gempolkerep—Kertosono.



7. Toeloengagoeng—Trenggalek—Toegoe.
8. Parigi—Tjidjoelang.
9. the double-track railway Weltevreden—Tjikampek.

II. In Sumatra:

1. Palembang—Lampong Districts.
2. Coal line Mocara Enim—Tandjoeng and the works at Kertapati.
3. Pajacombo—Limbanang.

Among the lines completed since the former edition of the Yearbook of the Netherlands East-Indies is the line Cheribon—Kroja, which was opened to public traffic on the 1st of January, 1917. The completion of this section made possible a one-day connection between Batavia and Sourabaya, which is of great importance to business and industry. On account of the shortage of locomotives and other materials, however, resulting from the world war, the one day service can not yet be introduced.

Ad 3^o. Tables next give an idea of the exploitation of the State railways and trams during the years 1910 up to and including 1918.

Standard-gauge tracks in Java.

	Number of K.M. exploited	Number of passengers carried	Tons of goods transported	Cost of construction in guilders	Gross receipts in guilders	Working expenses in guilders	Net revenues in guilders
1910	1.968	26.067.100	3.080.894	166.507.513	21.421.617	11.314.977	10.106.640
1911	1.981	29.811.460	3.194.103	169.932.205	24.147.912	11.897.903	12.250.009
1912	2.172	34.031.671	3.886.912	185.029.768	27.155.299	13.870.342	13.284.957
1913	2.228	38.747.080	4.167.640	200.665.149	29.860.672	15.347.573	14.513.099
1914	2.229	39.212.177	4.169.015	209.361.662	31.914.555	17.869.600	14.044.955
1915	2.238	39.314.692	4.727.717	214.448.660	33.357.470	17.325.192	16.032.278
1916	2.303	44.041.817	1.575.610	220.919.094	37.463.841	18.522.451	18.941.390
1917	2.108	10.116.426	1.943.372	247.738.426	40.982.248	21.663.913	19.318.335
1918	2.108	49.920.434	6.128.682	254.018.234	43.641.656	27.745.886	15.068.212

Narrow-gauge tracks in Java.

1910	27	371.920	24.414	250.293	64.959	28.172	36.787
1911	27	479.095	15.798	265.309	72.674	30.438	42.236
1912	43	538.548	20.274	-82.268	85.710	42.195	43.515
1913	83	957.158	50.780	1.113.925	193.989	100.547	93.442
1914	83	1.117.270	57.318	1.264.464	235.330	119.027	116.303
1915	83	1.378.280	75.553	1.373.852	283.727	142.033	141.694
1916	83	1.460.837	87.660	1.431.002	317.831	142.505	175.326
1917	83	1.588.086	110.535	1.497.081	351.758	147.096	204.662
1918	83	1.569.116	101.789	1.506.997	331.366	195.536	119.281



A railway-station in the Premier Reserve. In the background a mountain dedicated to the leg

Railways on the West Coast of Sumatra.

	Number of K.M. exploited	Number of passengers carried	Tons of goods transported	Cost of construc- tion in guilders (cost of harbour and coal sheds not included)	Gross receipts in guilders	Working expenses in guilders	Net revenues in guilders
1910	245	1,055,736	496,611	22,751,572	1,846,089	1,219,567	626,722
1911	245	1,697,580	512,643	22,985,715	1,967,164	1,421,171	545,993
1912	245	2,180,023	557,765	25,298,778	2,215,810	1,547,273	668,537
1913	245	2,700,838	585,509	25,755,684	2,386,555	1,527,101	859,454
1914	245	3,001,079	659,694	25,869,760	2,564,945	1,548,566	1,016,379
1915	245	2,880,986	660,544	24,028,558	2,649,298	1,477,867	1,171,431
1916	245	3,083,828	708,839	24,586,555	2,826,297	1,626,933	1,199,364
1917	245	3,524,870	701,076	24,498,309	2,685,647	1,667,915	1,017,732
1918	245	3,487,266	710,135	25,654,012	3,412,489	1,991,250	1,358,608

As seen from the above review the gross receipts of the Java railways increased not inconsiderably in 1914. On the other hand, however, the costs of exploitation increased quite considerably.

This was in connection with the increase in transportation and extension of staff and the rise in coal prices.

In the following war years, also, the gross receipts increased considerably, but especially since 1917 the exploitation costs have risen so enormously that the profits- and loss account diminished to a great extent.

In general the increasing traffic requirements could be satisfied. Only on the railroads in and around Batavia were special difficulties encountered; to overcome them expensive works are being planned and carried out.

II. *Private railroads and tramways.*

The first railroad established by private initiative is the line Semarang-Principalities-Willem I, running from Semarang via Surakarta to Djokja with a side branch from Kedoengdjati to Willem I. The concession for the construction of this railway, granted in 1862 to W. Poolman c.s., was later transferred to the joint stock company the "*Netherlands Indian Railroad Company*" (*Nederlandsch-Indische Spoorwegmaatschappij*), the establishing of which was sanctioned by Royal Decree of September 17th, 1863, No. 57.

The railroad was completed May 21st, 1873.

The Netherlands Indian Railroad Company obtained a concession in 1864 for the construction of a railroad between Batavia and Buitenzorg.

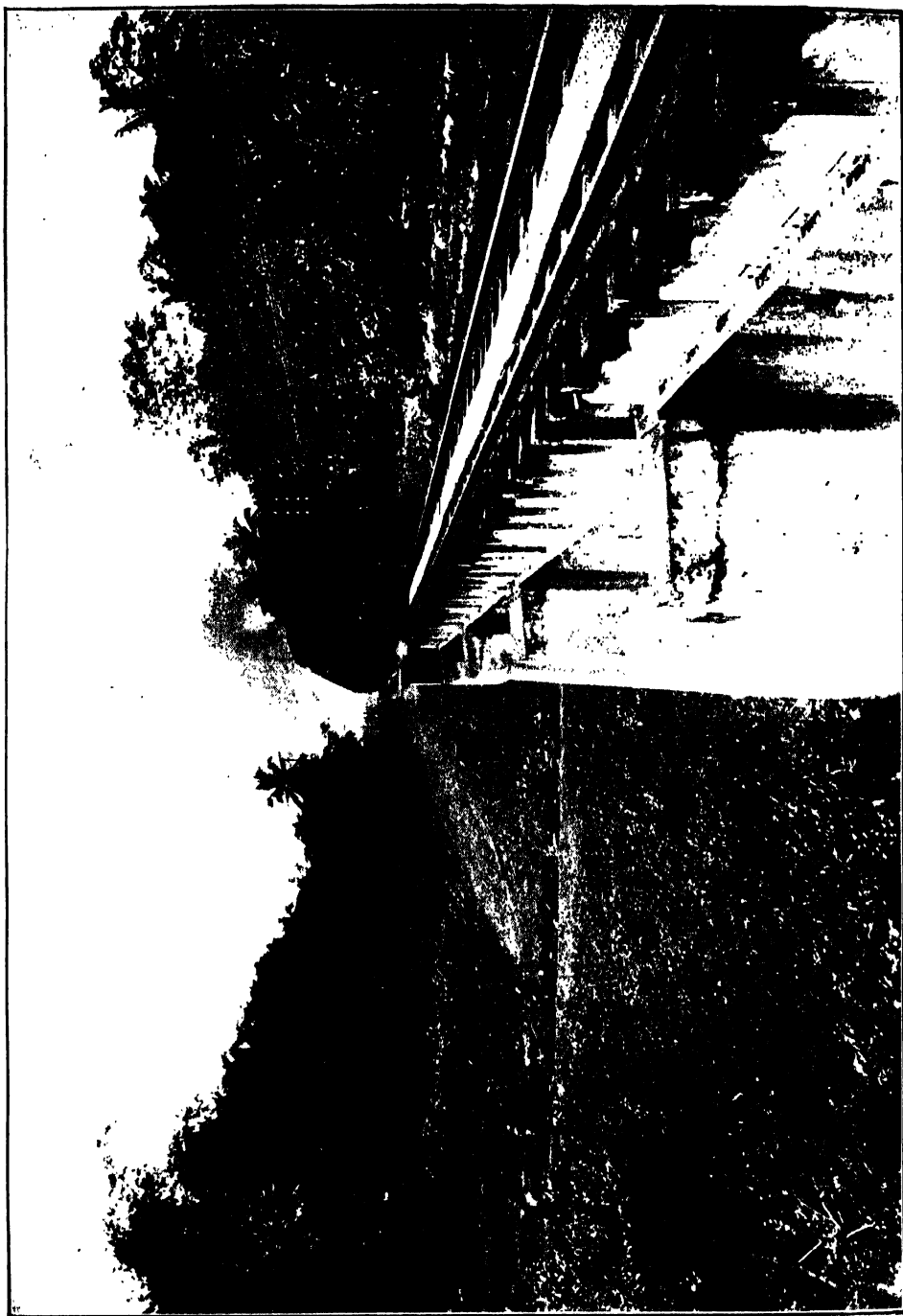
This line, which was completed January 31st, 1873, was purchased by the Dutch East Indian Government, and changed hands November 1st, 1913.

Furthermore the Company extended the net of iron roads by the construction (so far as the line under sub *d*. is concerned by purchase) of the following steamtrams:

- a*. Djokja—Brossot—Sewoegaloer, with side branch Ngabean—Poendoeng;
- b*. Djokja—Magelang—Willem I, with side branch Setjang—Parakan;
- c*. Goendih—Sourabaya, with side branches Soemari—Grissee—Kandangan, Bodjonegoro—Djatirogo and Babat—Toebean—Djenoe.
- d*. Solo—Bojolali;
- e*. Solo—Wonogiri—Kakap.

In 1918 it opened automobile services from Bringin and Toentang to Salatiga, also from Parakan to Wonosobo and Ngadiredjo.

Table next gives some data regarding the results of the working of the railway Semarang—Principalities in the period between 1914 and 1918.



Bridge over the Laguna

	Number K.M. in use	Number of passen- gers	Goods carried (in tons)	Cost of con- struction in guilders	Gross revenue in guilders	Net revenue in guilders	Working ex- penses
1914	206	3,351,706	808,944	54,428,829	5,162,100	2,249,142	2,912,958
1915	210	3,264,097	840,165	55,525,810	5,065,498	2,194,849	2,870,649
1916	210	3,648,621	957,345	56,351,240	5,752,526	2,988,401	2,764,125
1917	210	4,140,088	921,625	56,661,510	5,451,592	2,549,731	3,101,661
1918	210	4,099,071	1,072,115	56,753,532	6,264,857	5,014,627	3,250,230

In the district of Deli (East Coast of Sumatra) a third railroad was constructed by private enterprise.

In 1883 a concession was granted to the Deli Company (Deli Maatschappij) for the construction and exploitation of a railway, running from the anchorage on the Belawan River via Medan to Deli-Toewa with a side line to Timbanglangkat.

This concession was transferred to the *Deli Railway Company (Deli Spoorweg Maatschappij)*, established at Amsterdam.

The first part, 17 K.M. in length, was opened to traffic July 25th, 1886, while the line was further completed and opened up in 1887 and 1888.

Since then this Company was granted various concessions for the construction of further lines, partly railways, partly tramways. In the method of construction and exploitation, however, there is no appreciable difference between the railways and trams, while in the latest revisions of concessions some tramways were renamed as railroads and vice versa. The Company is at present exploiting the following railways: Belawan—Medan, Medan Timbang—Langkat, Medan—Perbaoengan, Perbaoengan—Tebing Tinggi—Tandjong Balei—Telok Niboeng and Tebing Tinggi—Pematang Siantar, and the following tramways: Medan—Deli Toewa—Batoc, Kampong Baroe—Arnhemia, Locboek Pakam—Bangoen Poerba, Timbang Langkat—Kwala, Timang Langkat—Pangkalan Brandan and Pangkalan Brandan—Besitang.

Table next gives some data regarding the working of these railroads and tramways over the period 1914—1918.

	Number K.M. in use	Number of passen- gers	Quantity of goods carried (in tons)	Cost of construction in guilders	Gross revenue in guilders	Net revenue in guilders	Working expenses
1914	263	3.079.482	587.816	22.697.829	3.300.017	1.598.258	1.701.759
1915	361	3.064.627	800.455	25.680.188	3.433.636	1.754.708	1.678.928
1916	410	3.930.221	964.350	27.678.081	4.513.424	2.509.279	2.004.145
1917	410	4.573.450	918.515	30.285.429	5.079.356	2.805.866	2.273.490
1918	414	4.529.174	893.638	33.295.158	5.606.495	2.874.824	2.731.671

Since January 1st, 1916 the Company has run an auto-omnibus service from Medan to Kaban Djahe.

The tramway net established with private capital, extended considerably in the course of the years and at the end of 1918 reached a total length of about 2200 K.M.

To the principal private tramway companies belong:

The *Semarang—Joana Steamtram Company*, which runs the following lines: Semarang—Joana—Lassem—Pamotan—Ngandang—Djatirogo with side lines Demak—Blora, Koedoes—Petjagaän (with side line Majong—Welahan), Joana—Tajoe, Rembang—Tjepoe, Poerwadadi—Goendih and Wirosari—Kradenan.

The *East Java Steamtram Company*, which runs the lines Sourabaya—Sepandjang—Krian, Wonokromo—Koepong—Pasar Toeri—Stadstuin—harbour and Modjokerto—Ngoro with the side line Soemengko—Dinojo.

The *Serajoeal Steamtram Company*, which runs the lines Maos—Bandjarnegara, Bandjarsari—Poerbolingo and Bandjarnegara—Wonosobo.

The *Semarang—Cheribon Steamtram Company*, which runs the lines Semarang—Cheribon—Kadipaten, Pekalongan—Wonopringgo and Tegal—Balapoelang—Margasari.

The *Kediri Steamtram Company*, which runs the lines Kediri—Djombang with side lines Pesantren—Wates, Goerah—Kawarassan—Palem—Papar, Paree—Kepoeng, Paree—Konto and Poeloredjo—Kandangan.

The *Malang Steamtram Company*, with the lines Singosari—Blimbing—Malang—Gedonglegi—Dampit with side lines Gedonglegi—Senggoro—Kepandjen, Blimbing—Toempang and Sedajoe—Toeren.

The *Pasoeroean Steamtram Company* with the lines Pasoeroean—Waroengdowo, with side lines Waroengdowo—Alkmaar, Waroengdowo—Winongan and Waroengdowo—Ngempit.

The *Probolinggo Steamtram Company*, with the line Modjokerto—Porong, with side lines Djapannan—Bangil and Bangsal—Poegeran.

The *Madura Steamtram Company*, with the lines Kamal—Pamekasan—Soemenep—Kaliangat and Kamal—Bangkalan—Tanahmerah—Kwanjar.

Automobile Service.

To meet the need for a means of quick communication in places where these are few, the Government has established various automobile services for passengers, mail- and freight transportation. These services are under management of the State railways and trams.

In Sumatra similar services are found:

1. in the residency Palembang, with regular services between Moeara Enim, Batoeradja and Mocara Doewa and special connections from Mocara Enim to Djaray, to Padang Boernay, to Talangpadang, to Tebing Tinggi and to Semendo;
2. in the residency Benkoolen, with regular special services from Benkoolen to Mocara Aman, to Ketahoen and to Mocara Klingi and
3. in the residency West Coast of Sumatra and Tapanoeli, with the regular services Fort de Kock—Sibolga, Padang Sidempoean—Sipirok, Fort de Kock—Matoer, Fort de Kock—Fort van de Capellen, Fort van de Capellen—Rau, Simaboer, Goege—Tjina and Koemanis, Koemanis—Boea and Sibolga—Taroetoeng.

In Java an automobile service was opened in 1918 between Cheribon and Koeningan.

The Service for Waterpower and Electricity.

Since 1910 the waterpower problem has been studied by the Government, originally merely for the sake of electrifying the State railways, but later on a wider basis in the interest of a better supply of energy as an important factor to the industrial development of the country.

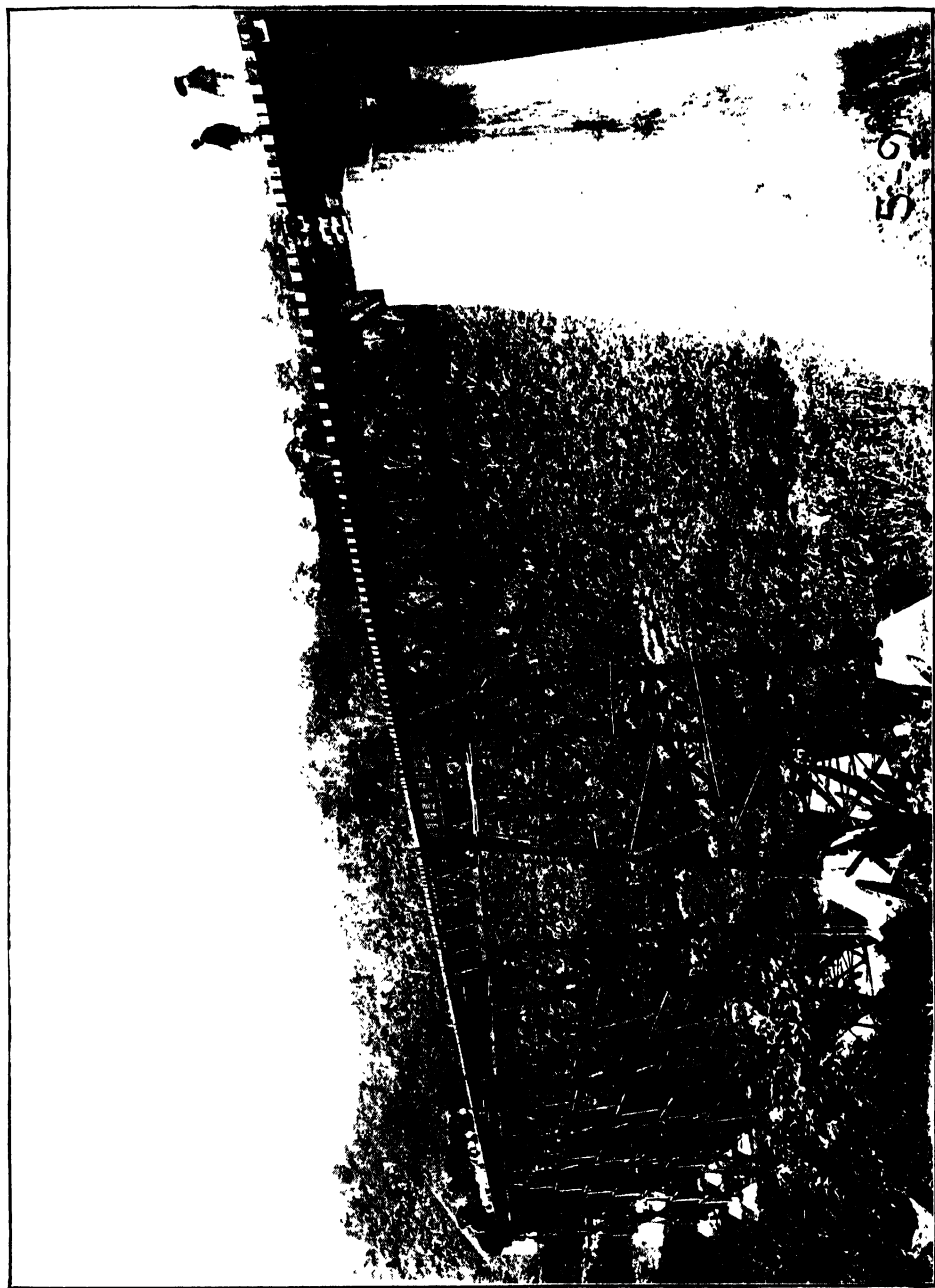
The Service for Waterpower and Electricity is an independent subdivision of the Departement of Government Enterprises. To this new Service is assigned the task of „effectually promoting an economical supply of energy to the districts, which come under consideration therefor, making efficient use of the Country's waterpower for the industrial development of these colonies in general and for that of the State railways and other Government industries in particular”.

To attain this purpose the Service for Waterpower and Electricity has charge of:

- a. the systematic investigation and exploration of valuable waterpower in those regions, where most need will be felt for this source of power;
- b. taking an inventory of the waterpower discovered and giving information to those interested;
- c. the promoting of the economical use of the great sources of power which are to be made available and the prevention of waste in the country's valuable sources of energy;
- d. the promoting of an economical and systematic provision for the need of electrical energy and the giving of information to those interested;
- e. the supporting and establishing of powerful electrical industries in regions, where valuable sources of power are at hand and where there is need for electrical energy, among other things by furnishing technical data and information and also by making tests and technical researches in the electro-industrial field or for the promotion of waterpower works in general;
- f. the making up of budgets and plans, and, where necessary, the supervision of the construction of waterpower works and other important works in the electro-technical field, for the Department of Government Industries or, if desired for other Departments, for Provinces and Communities. This includes, also, the plans for the electrification of the railways and the reservation of the waterpower especially adapted for this purpose, besides making a study of the way in which provision may be made for the future need of electricity, in so far as this can not be supplied by waterpower;
- g. the handling of matters, concerning concessions for waterpower and licenses for the construction and the use of conducting wires for electric lighting and the transmission of power by means of electricity, besides seeing that the regulations referring to these concessions and licenses are carried out.

In order to make a practical division of the above task, the service has besides an administrative division, three technical departments, namely the hydrotechnical, the electrotechnical and the construction department, all of which are established at Bandoong. Twenty engineers are active in the Service.

The Department of Electricity does all work of an electrical mechanical nature. This department also gives advice, particularly to local resorts, regarding subjects, which belong to its line of activity. It carries out, according to the principles, adopted by the Government, the „electricity policy“, the object of which is to lead up to the supplying of electrical energy in the Dutch East-Indies in as rational a way as possible, and in this connection handles all incoming requests for licenses to establish local electrical industries.



Viaduct over the rising of the Tipamettan River

It is the task of the Department of Construction to carry out all work to be done by the Service.

The Hydrotechnical Department has charge of all remaining activities. In the first place the systematic research for waterpower, by the studying of maps as well as by field exploration and water gauging. For this purpose water observation posts have been established in rivers and lakes, to the number of 30 in Java and 10 in the Outlying Possessions (Sumatra and Celebes), wick posts are being continually increased. Many of these posts are provided with selfregistering level-gauges. The water gauging is done with electrical gauge instruments. The figures obtained daily will be regularly published as a sub-division of the socalled waterpower cadastre. In this cadastre will also be included all data regarding location and power of waterpower sources, those which have not yet been utilized as well as those which are already partly or entirely in use. Waterpower concessions and licenses already granted will also be registred in this cadastre. This waterpower cadastre is open to the public; private individuals wishing to make use of waterpower may learn beforehand what is already known concerning the rivers or aqueducts which they have in view.

The force of the waterpower located by the Government in Java, Sumatra and Celebes, which come into consideration for registration in the cadastre, may already be estimated at more than 1.500.000 H.P.

Regarding the works completed by the Service for Waterpower and Electricity, projects being carried out and plans in consideration, the following may be told :

Two completed waterpower works have already been put to active use, i.e. the State powerhouse in the Tjatoer Valley for the use of the State railway workshops in Madioen, which has produced excellent results since 1917, and a small powerhouse south of Bandoong which since 1918 has served for the wireless station at that place.

A waterpower work to supply the Government gold mines and the private mines at Redjang Lebong with energy is almost completed on the Ketahoen River near Lake Tais in Benkoolen.

The powerhouse Tjatoer near Madioen has two turbines of 1000 H.P. each, working under a waterpressure height of 110 M. The supply aqueduct has a total length of 2200 M. from the waterreserve to the pipe conductors of the turbines, in which are two tunnels respectively 240 and 360 M. long. The electrical energy is transmitted under a pressure of 25.000 Volts along an air conductor on iron masts to the sub-station at Madioen.

The waterpower station at Lake Tais in Benkoolen is at present provided with two turbines of 1000 H.P. each, working under 50 M. water pressure,

The small waterpower installation for the wireless station near Bandoong has a power of about 200 H.P. A second waterpower work for the wireless station, of \pm 350 H.P., is almost completed.

There are also in course of construction in Java two waterpower works, i.e. on the Tji Anten and Tji Tjatih for the railway and to supply energy to the Residency of Batavia and West Preanger, besides two works on the Tji Saroewa for purpose of supplying hydro-electrical energy to the mountain plateau of Bandoong.

The power to be installed in these four stations will amount to about 40.000 H.P. (on the turbine axle). Of this 28.000 H.P. will go to the station at Tji Anten, for the purpose of taking up the considerable variation of load of the electric railways in and around Batavia.

The new waterpower work of 3000 H.P. on the Tji Kapoendoeng, will replace the old Dago station of the Bandoong Electricity Company, which will be taken over by the State and held in reserve.

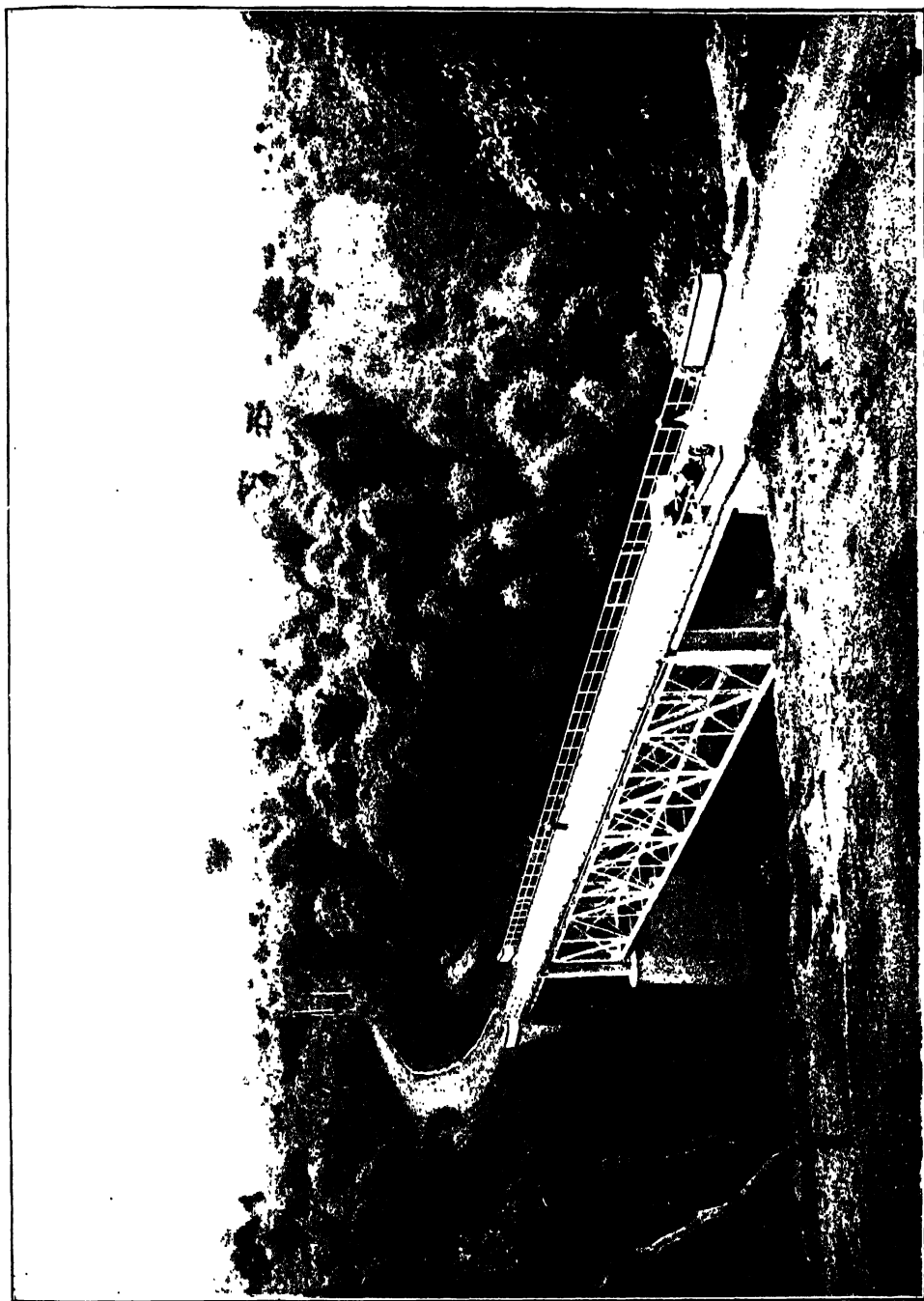
Concerning the waterpower work to be built on the Tji Saroewa, a branch of the Tji Sankoey River, south of Bandoong, where 4500 H.P. will be installed, it may be said in addition that this work will have two waterreserves and two supply aqueducts, of which one will draw the water from the Tji Saroewa and the other the water from the Tji Sankoey. In the dry season water will also be supplied from the Sitoe Tji Leuntja, a small lake which drains into the Tji Saroewa as well as in the Tji Sankoey upstream the proposed waterreserves. By storing up the water of this lake it will be converted into a reservoir of at least 10.000.000 M³.

Downstream from this powerhouse, which is in course of construction, it is possible to build another, which will utilize the water already used by the first station, but with a fall twice as high. The plans for this second powerhouse are already being made.

The waterpower works on the Tji Kapoendoeng, Tji Sankoey and Tji Geureuh (wireless station) are mutually connected by a high-tension conductor.

Extension of the energy supply on the mountain plateau of Bandoong is necessary in view of the increasing need of power in the Government wireless stations, military workshops and institutions, railroad workshops and private industrial enterprises.

In Central Java there is a private waterpower station for general electricity supply, namely the Toentang station, belonging to the General Dutch East Indian Electric Company (Algemeene Nederlandsch-Indische Electriciteitsmaatschappij or Aniem). The proposed extension of this industry over a greater area than exclusively Semarang and suburbs, electrification plans under consideration by the Dutch East Indian Railway Company as well as the plans of the irrigation service to store up the so-called Rawa Pening near Ambarawa into a reservoir of 237 million M³ have made it neces-



A road with river-crossing in the Pranger Region.

sary to study in its entirety the problem of supplying energy to Central Java. This study is not yet completed. As power sources for Central Java the Toentang and the Serajoe are being considered. Under present conditions the Toentang can be utilized for waterpower works with a capacity of 13.000 H.P. This power can be doubled by the construction of the Pening reservoir, by which the minimum supply can be doubled.

Although the introduction of electrical traction on the Netherlands Indian Railway lines will consume a large part of the Toentang waterpower, there is for the present no definite outlet for the surplus power to be obtained from the Rawa Pening reservoir.

For East Java there is a plan to construct a State waterpower work of 10.000 H.P., on the Kali Konto, intended for the electrification of the State railways in and near Sourabaya and also for the general supply of electricity in the provinces of Sourabaya, Kediri and Pasoeroean.

During the past year the State has also begun to locate the great sources of waterpower in the Outlying Possessions. Originally limited to the region of the iron and nickel ore in Celebes, this waterpower research is now being vigorously carried on in other places. In the course of this year the Asahan River in North Sumatra is to be explored, and later various rivers and lakes in Central and South Sumatra, also in Acheen. In Celebes the waterpower in the La Rona, Posso and Lea are being investigated. The force of the waterpower which can be developed economically in the La Rona is estimated at least 150.000 turbine H.P. In the Posso at least 200.000 H.P. are available and in the Lea an average of 100.000 H.P.

The La Rona and the Posso drain the water from the great lakes of Central Celebes (Matano, Mahalona, Towoeti and Posso) so that by regulating these lakes the aforesaid power can be developed during the whole year.

In the Asahan River at least 500.000 H.P. may be expected while in South Sumatra on the Ranau lake together with some other places 200.000 H.P. can certainly be counted on.

A vigorous continuance of the Government's exploration of great waterpowers in the Outlying Possessions is necessary to determine before long the industrial possibilities in connection with powerful and cheap waterpower, particularly in the field of the so-called nitrogen industry.

Shipping.

As an island empire the Dutch East-Indies feel the need of shipping traffic for the exchange of their products with those of foreign countries.

The important colonial products such as: sugar, coprah, oil, quinine.

tobacco, coffee and tea must find their market in foreign countries, while the necessary implements, foodstuffs and other articles for the maintenance of the Europeans and Natives and for the needs of agriculture, must for the main part be imported, because industry in this country can not provide for those needs.

In the last few years the export alone of the principal articles from the Dutch East-Indies has amounted to an average quantity of $3\frac{1}{2}$ million tons.

For the transport of such a quantity a considerable fleet is required, which, to a great extent, is provided by the following Dutch Navigation Companies:

„Stoomvaartmaatschappij Nederland”,
„Rotterdamsche Lloyd”,
„Nederlandsche Stoomvaartmaatschappij: Oceaan”,
„Java-China-Japan Line” and
„Koninklijke Paketvaartmaatschappij”,

while many foreign navigation companies participate in the transport, especially the English, Japanese, Scandinavian, American and, before the war, the German also.

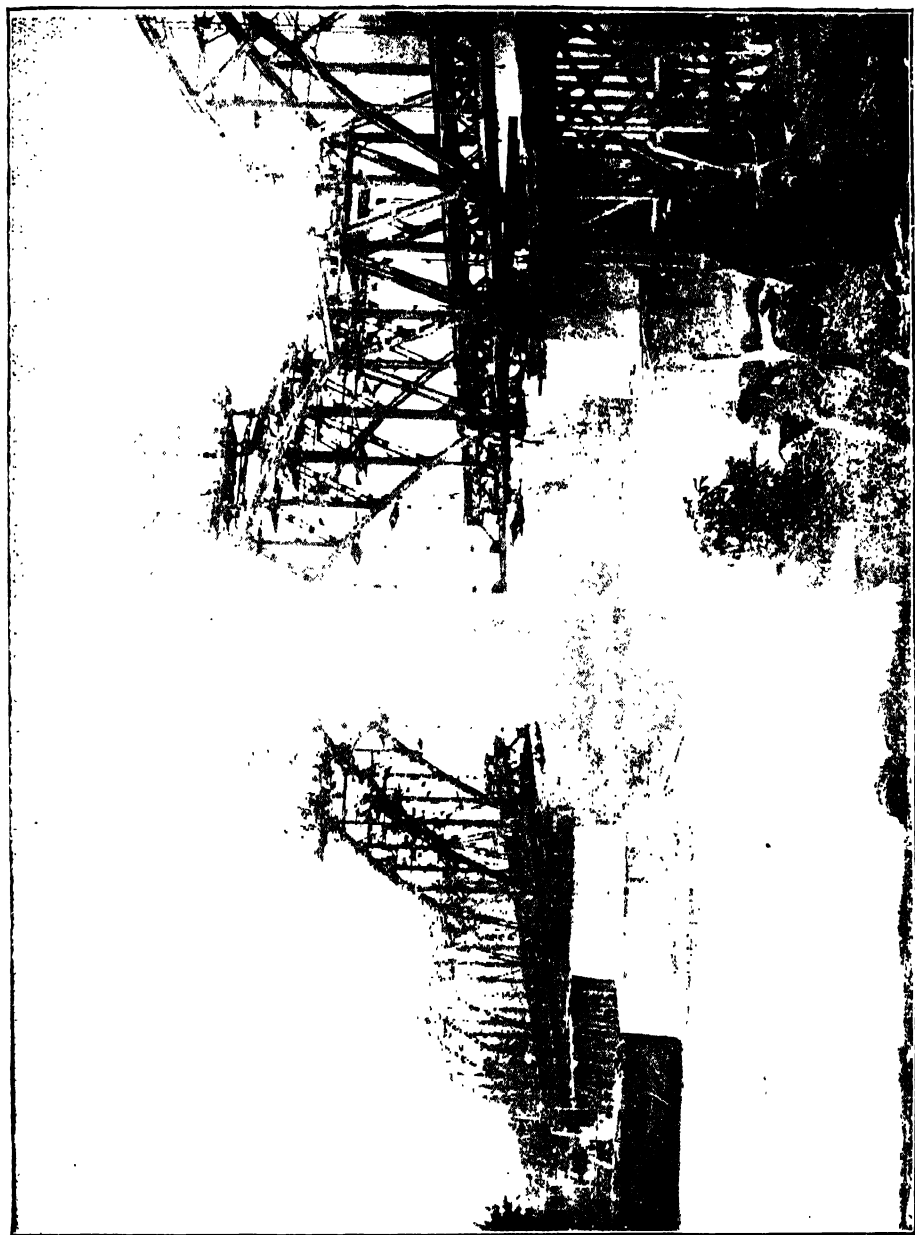
The principal ports of the Dutch East-Indies are, in Java: Batavia (Tandjong Priok), Sourabaya, Semarang, Cheribon, Tegal, Pekalongan, Panaroekan, Banjoewangi and Tjilatjap.

in Sumatra: Telok Betong, Benkoolen, Padang, Sibolga, Sabang, Belawan Deli and Palembang.

in Borneo: Pontianak, Bandjarmasin, Stagen and Balikpapan.

in Celebes: Makasar and Menado.

From the following data may be seen, of what significance the above named ports are to the ocean traffic. Herein are recorded the number of arrivals and departures of steamships owned by private companies (vessels with more than 300 M³ net capacity) and their net capacity over the year 1918:



Rubicon-bridge over the Niagara-River in course of construction

Harbours	Arrived		Departed	
	Number	M ³	Number	M ³
<i>Java:</i>				
Batavia (Tandjong Priok)	1397	5.703.980	1391	5.642.327
Sourabaya	1225	5.265.327	1220	5.265.345
Semarang	869	4.683.865	887	4.665.365
Cheribon	475	2.180.980	474	2.178.097
Panaroekan	342	505.581	344	520.318
Tegal	205	1.097.971	204	1.085.450
Pekalongan	172	843.315	172	843.315
Banjoewangi	125	368.841	125	368.841
Pasoeroean	69	462.138	69	462.138
Probolinggo	63	425.786	63	425.786
Tjilatjap	53	276.628	53	276.628
<i>Sumatra:</i>				
Belawan Deli	595	1.088.895	596	1.089.436
Palembang	331	653.287	331	653.985
Telok Betong	281	634.726	280	632.557
Padang	271	1.567.583	269	1.545.534
Sabang	232	1.042.139	235	1.068.773
Sibolga	120	370.526	120	370.526
Benkoolen	112	404.697	112	404.697
<i>Borneo:</i>				
Balikpapan	454	1.843.226	453	1.847.465
Bandjermasin	314	527.940	314	526.215
Pontianak	249	258.149	249	257.409
Stagen	227	550.449	227	550.449
<i>Celebes:</i>				
Macassar	495	1.988.401	492	1.976.981
Menado	137	630.495	137	630.203

The following statement shows what proportion of the total traffic of the Dutch East-Indies with foreign countries is on ships sailing under the Dutch flag, giving the total number of ships with more than 300 M³ net capacity, arrived and departed under Dutch and foreign flag respectively, in the years 1911 up to and including 1918.

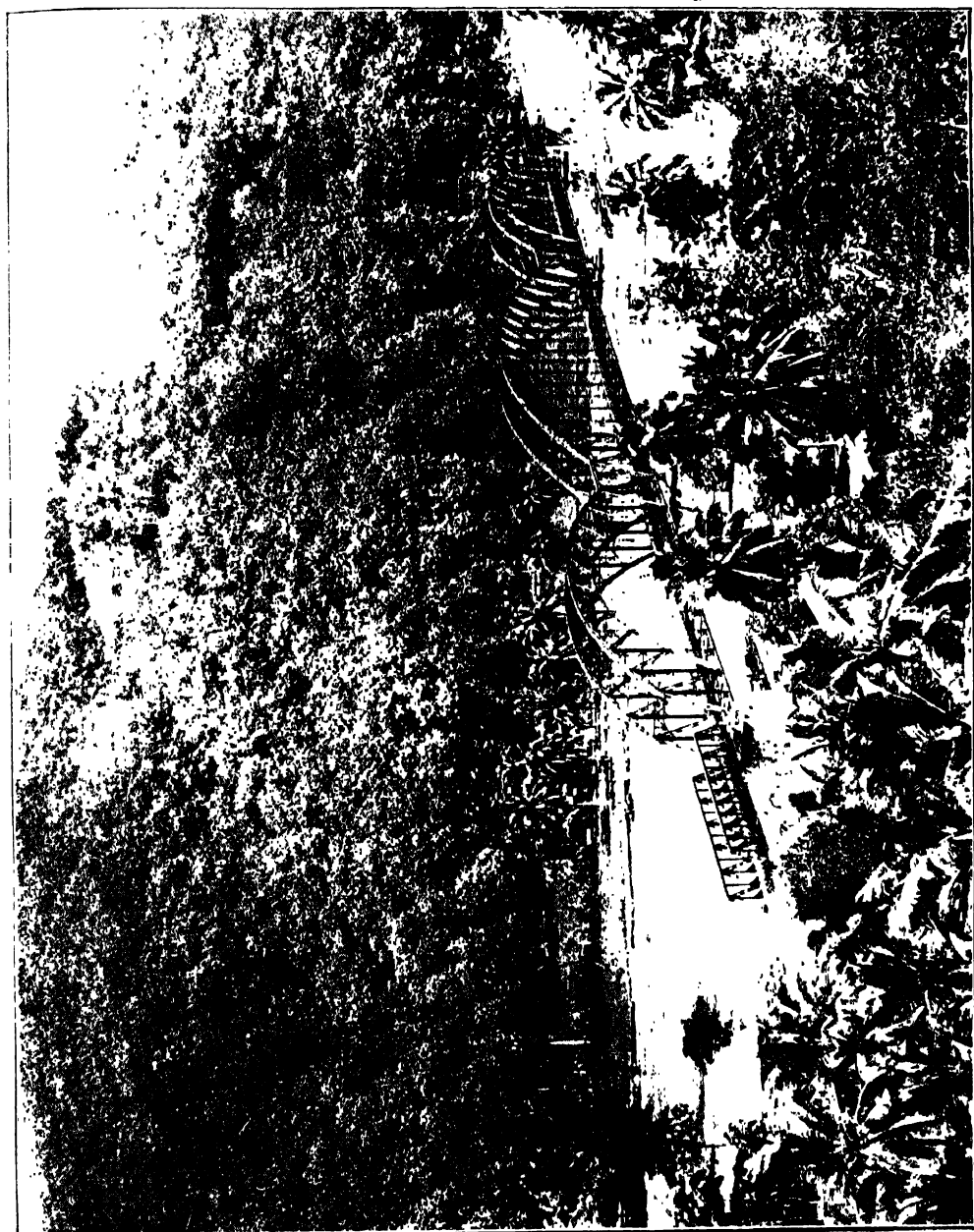
Arrived under:	1911		1912		1913		1914	
	Num- ber	1000 M ³	Num- ber	1000 M ³	Num- ber	1000 M ³	Num- ber	1000 M ³
Dutch flag	1522	4740	1563	5156	1585	5468	1604	5514
Foreign „	1826	7765	1870	7787	1898	8538	1688	7291
Departed under:								
Dutch flag	1503	4498	1804	5510	1819	5717	1737	5708
Foreign „	2045	7932	1985	8389	2019	8750	1730	7164

Arrived under:	1915		1916		1917		1918	
	Num- ber	1000 M ³	Num- ber	1000 M ³	Num- ber	1000 M ³	Num- ber	1000 M ³
Dutch flag	1763	5769	1814	5737	1715	4844	1312	4011
Foreign „	1554	5418	1247	5350	960	3590	964	3360
Departed under:								
Dutch flag	1733	5845	1791	5725	1585	4741	1283	4104
Foreign „	1440	5807	1304	5665	1002	3679	979	3257

From the above it appears that in the years before the war the Dutch flag did not half provide for the need of shipping space in these countries. Herein England provided for an equal part. During the war there was of course a change in this condition, by the disappearance of the German ships from the world seas and the changed destination of the allied mercantile fleet.

Given the fact that the Dutch fleet during the war years increased only a little, the Dutch East-Indies will remain largely dependent on foreign shipping space, for which need Japan chiefly will provide, though American ships, also, will have a share in the transport, while England will try as much as possible to restore her old relations.

The total shipping space under Dutch flag (i.e. steamships of more than 100 tons) medio 1919 amounted to 1,574,000 Gross Reg. tons, or ± 100,000 tons more than medio 1914, an increase, therefore, of almost 7⁰/₁₀.



Railroad bridge over the Suva River

Of this fleet about 45 %, i.e. more than 700.000 Gross Reg. tons, is destined exclusively for traffic with the East Indian Colonies.

Besides the navigation companies named above, the following lines take part in the traffic of the Dutch East-Indies: the Holland-America Line, the Netherlands India Tank Steamship Company, the Petroleum Company "La Corona" and the Bataafsche Petroleum Company, the first for freight transport to New York, in conjunction with the Mij „Nederland", the „Rotterdamsche Lloyd" and the „Stoomvaart Mij Ocean", the last three for the transport of Netherlands Indian petroleum and petroleum products in tank-steamers.

From the data recorded above regarding ships arrived and departed under Dutch and foreign flag, it appears that the amount of shipping space in outgoing vessels was as follows in the years mentioned:

in 1911	around	12 1/2	million	M ³
„ 1912	„	14	„	„
„ 1913	„	14 1/2	„	„
„ 1914	„	13	„	„
„ 1915	„	12	„	„
„ 1916	„	11 1/2	„	„
„ 1917	„	8 1/2	„	„
„ 1918	„	7 1/2	„	„

In the normal year 1913 before the war, therefore, the shipping space required for the transport of Indian products amounted to $\pm 14 \frac{1}{2}$ million M³.

The shipping space available steadily diminished, however, during the war years, so that in 1918, without counting the normal increase of production, there was a shortage of shipping space amounting to 7 million M³.

Of the shipping traffic to India under foreign flag the German flag, which in 1913 had 1.7 million M³ available, will for the next few years be able to appear only on a small scale in the Indian waters.

England, with her round 6 million M³ of 1913 will be obliged to limit the use of her shipping space, in view of her considerable losses during the war.

In recent years we see that the place of Germany and partly of England in these waters is more and more being taken by Japan, the United States and also Scandinavia, regarding which the following particulars may be given.

Remarkable is the increase of the Japanese flag in the Dutch East Indian harbours. While in 1911 only 15 Japanese ships (above 300 M³ capacity) arrived, this number increased in the following years to respectively 45, 77, 56, 98, 92 and 97, to climb to 299 in 1918.

The largest share of this traffic during the year last mentioned was taken by the „Osaka Shosen Kaisha" with 103 ships, followed by the

„Nippon Yusen Kaisha”, the „Toyo Kisen Kaisha” and the „Nanyo Yusen Kabushiki Kaisha”.

This traffic increase is not to be wondered at considering that Japan must seek freight for a fleet which, according to Lloyd's Register in 1919, measured 2.525.000 Gross Register tons and which has increased about 36 % during the war years.

The shipping under American flag has also increased considerably. Under management of the United States Shipping Board America is striving to bring the oversea traffic as much as possible under her own flag. She has already succeeded in establishing many regular connections between the States and other countries, these lines as a rule being exploited by separate navigation companies which are in some way supported by the Shipping Board. In this way the following lines have opened a direct service from America to the Dutch East-Indies:

the Independent Steamship Corporation at New York,

the Clan line " " "

the Robert Dollar Company at San Francisco,

the Pacific Mail Steamship Company at San Francisco of which the first two traverse the Atlantic and the others the Pacific.

The Independent Steamship Corporation and the Pacific Mail S.S. Co. maintain a monthly service, while those of both the other lines are rather irregular.

The shipping of Scandinavia was considerably extended during the war.

In these countries, also, there was a noticeable striving to establish direct communication with the lands of production. A result of this was the founding of the „Scandinavia-Java Line”, a combination of the „Norwegian Africa and Australia Line” at Christiania, the „Rederietactiebolaget Transatlantic” at Gothenburg and the „A/S det Ostasiatiske Kompagni” at Copenhagen, which lines maintain regular services between the Scandinavian countries and the Dutch East-Indies.

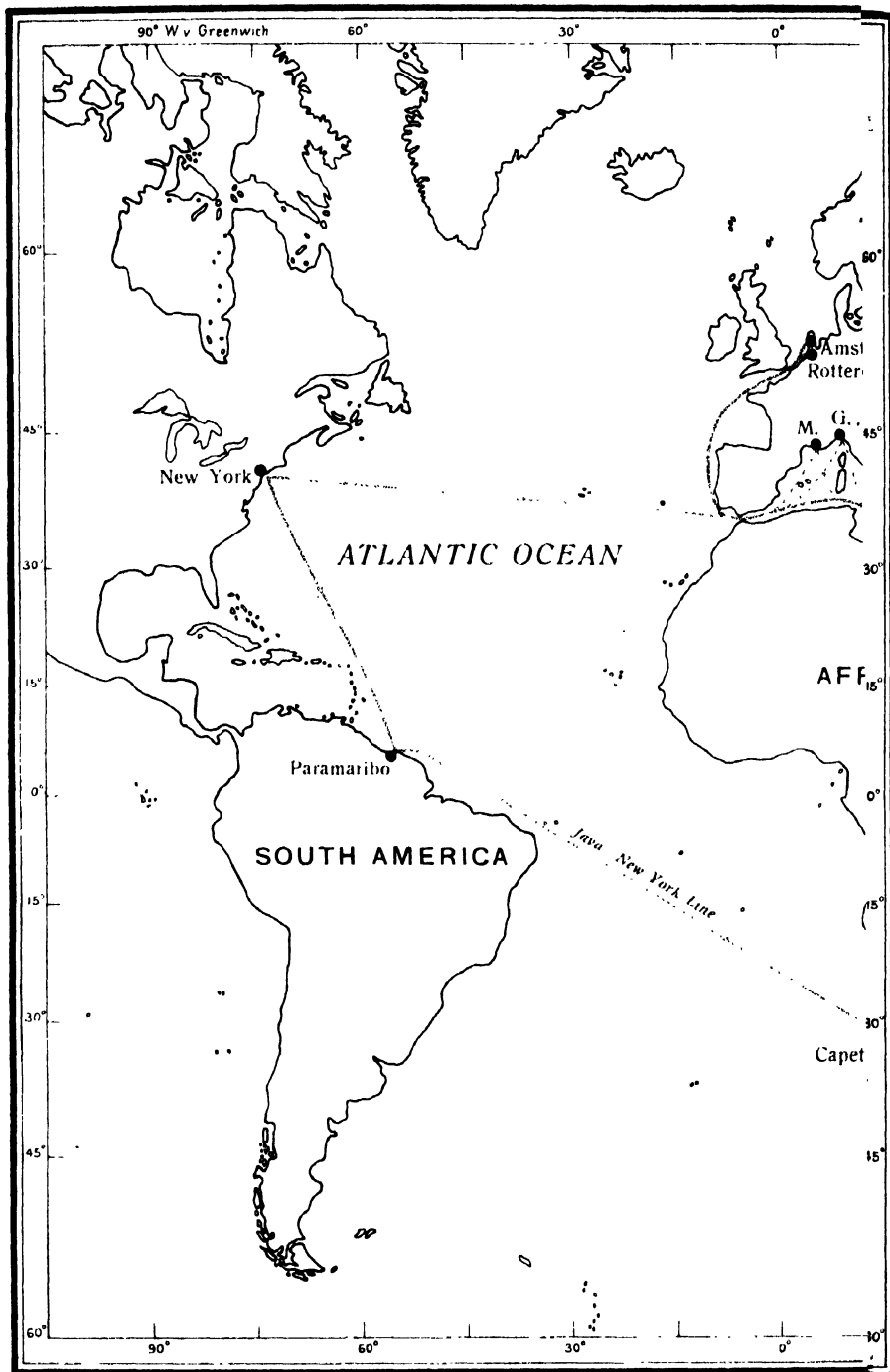
The direct, regular shipping connections under Dutch flag of the Dutch East-Indies with foreign countries are indicated on adjoining maps. Such connections exist with Holland, British India, Malacca, Further India, China, Japan, South Africa, the United States of North America (New York, San Francisco), Australia, Chili and Peru.

Below is a brief account of the principal regular lines under Dutch flag, which navigate the Dutch East Indian ports.

The „Stoomvaart Maatschappij „Nederland” maintains:

- 1st. a regular fortnightly passenger service between Holland and the Indies with mail boats which at present take the following route, coming from Holland:

NET



Amsterdam — Southampton — Lisbon — Port Said — Suez — Colombo — Sabang — Belawan — Singapore — Batavia — Semarang — Sourabaya, and from the Indies back to Holland: Sourabaya — Semarang — Batavia — Singapore — Belawan — Sabang — Colombo — Suez — Port Said — Amsterdam.

As soon as conditions in Europe are quite normal again, Genoa will also be called at on the outward and homeward bound voyages.

2nd. a regular cargo service from Holland to the Indies and back, whereby in the Indies, besides at the places where mail steamers call, freight is sometimes loaded at Macassar, Balikpapan, Menado, Tjilatjap, Oosthaven, Cheribon, Tegal, Pekalongan and Padang. This service is maintained by almost all cargo steamers belonging to the Company mentioned below, with the exception of some ships, which maintain the service to New York and San Francisco, concerning which more later.

3rd. a regular cargo service with limited passenger accomodation, in combination with the „Rotterdam Lloyd“, the „Stoomvaart Maatschappij Oceaan“ and the Holland-America Line, from Java to New York and back, wherein on the outward bound voyage the following route is taken: Sourabaya — Semarang — Batavia — Padang — Durban — Capetown — Barbados — New-York, while the homeward voyage takes place, via the Suez Canal, to Padang, Batavia and other places for discharging cargo in the Dutch East-Indies.

Macassar is also called at several times for loading. Some ships in this service go via Paramaribo on the outward and homeward bound voyages, for the transport of emigrants from Java to Paramaribo and back. If ships are obliged to call at Paramaribo on the return trip, then the route does not go via the Suez Canal, but via Paramaribo, Capetown Durban and Padang, to Batavia and other unloading ports in the Dutch East-Indies.

4th. the Java-Bengal Line.

This line is a combined service of the „St. Mij. Nederland“ and the „Rotterdam Lloyd“.

The following ports are included in the sailingplan: Sourabaya and eventually other ports in East Java, Semarang and eventual West Java ports, via Padang or Sabang to Calcutta and in normal times to Rangoon. From both the lastnamed ports the ships generally return to Batavia via Sabang.

At present this line has two ships of the „Mij. Nederland“ and two of the „Rotterdam Lloyd“ of about 6000 Gross Register tons.

There is one sailing per month, except during the heavy sugar transport (i.e. about six months of the year) when there are two sailings per month.

The fleet of the „Mij. Nederland“ is composed as follows:

Mail Ships

	Gross Tonnage		Gross Tonnage
Oranje	4437	Koningin der Nederlanden	8225
Rembrandt	5875	Prins der Nederlanden	9322
Vondel	5866	Jan Pieterszoon Coen	11693
Grotius	5867	Johan de Wit (in construction) ±	10000
Prii Julia	8085		

Cargo Steamers

	Gross Tonnage		Gross Tonnage
Timor	3608	Radja	7481
Ambon	3598	Roepat	7499
Java	4832	Riouw	7526
Ceram	4307	Rotti	7518
Banda	3893	Rondo	7549
Celebes	5878	Borneo	6550
Lombok	5934	Bintang	6548
Sumatra	5850	Bali	6694
Billiton	5889	Bengkalis	6548
Nias	5916	Batoc	6535
Calcutta	5541	B (being built)	6600
Karimoen	6940	B (" ")	6600
Karimata	6939	B (" ")	6600
Kambangan	6917	B (" ")	6600
Krakatau	6738	B (" ")	6600
Kangean	6857	B (" ")	6600
Boeton	6253	B (" ")	6600
Batjan	6232	B (" ")	6600
Bangka	6561	B (" ")	9250
Belawan	6479	B (" ")	9250
Boeroe	6591	B (" ")	9250

Total gross tonnage 342.121.

The „Rotterdam Lloyd“.

This Company has a fleet consisting of the following steamers:

For the Mail Service

	Gross Tonnage	Tons Capacity	Horse- power
Goentoer	5891	5500	4300
Insulinde	9611	9800	7000

	Gross Tonnage	Tons Capacity	Horse- power
Kawi	4872	4600	3600
Rindjani	4762	4600	3600
Sindoro	5471	5000	4000
Tabanan	5271	5400	4300
Tambora	5602	5600	4500
Wilis	4731	4600	3600
Patria	± 10000	10000	7000

For the Cargo Service

Arakan	5106	8600	3400
Bandoeng	5577	9000	2400
Besoeke	3778	5500	1500
Birma	4859	7800	3400
Buitenzorg	7098	11000	3700
Ceylon	4999	8100	3400
Deli	6799	11000	3600
Djebres	3541	5200	1500
Djember	7058	11000	3700
Djoeja	4171	6700	2000
Garoet	7133	11000	3700
Gorontalo	5884	9200	2400
Jacatra	5870	9200	3500
Kediri	3593	6300	2000
Madioen	6803	10000	3600
Malang	3527	5200	1500
Medan	5933	9200	2400
Menado	5874	9200	2400
Merauke	6674	10000	3600
Samarinda	6825	11000	3600
Sitoebondo	7057	11000	3700
Soerakarta	6926	11000	3600
Ternate	5909	9200	2400
Blitar (being built) ±	7000	10000	3700
Bondowoso (" ")	5500	9000	3000
Djambi (" ")	7000	12000	3700
Kertosono (" ")	7000	11700	4500
Palembang (" ")	7000	12000	3700
Soekaboemi (" ")	7000	11700	4500
Tjiandjoer (" ")	7000	10000	3700
Tosari (" ")	7000	12000	3700
Marken (chartered)	4411	7200	2300

Total Gross Tonnage, not including ships being built, 177,209.

The company maintains the following regular services:

A. A fortnightly mail and passenger service and a regular cargo service between Rotterdam and Java v.v. with intermediate ports as far as conditions make this desirable or necessary.

B. Service Java—New York via the Cape Colony in combination with the St. Mij. Nederland, Holl.-Am. Line and S.M. Oceaan.

C. Java—Bengal Line, service between Java, Calcutta v.v. in combination with the „Stoomv. Mij. „Nederland”.

D. Hamburg—Antwerp—Java v.v., which line will run again toward the end of 1919.

The „Nederlandsche Stoomvaartmaatschappij „Oceaan”.

This navigation company owns five ships under Dutch flag, namely:

Dardanus	4335	Gross	Reg.	tons
Antenor	5319	„	„	„
Patroclus	5212	„	„	„
Sarpedon	4593	„	„	„
Tantalus	3544	„	„	„

It maintains a cargo service between the D.E.I.—Liverpool—Amsterdam v.v. It also takes part in the Java—New York Line. The Company is very closely related to the Ocean Steamship Company Ltd. and the China Mutual Steam Navigation Company Ltd.

The Java—China—Japan Line.

The Company owns the following steamers:

Tjipanas	3816	Gross	Reg.	tons
Tjilatjap	3860	„	„	„
Tjiliwoeng	4809	„	„	„
Tjikini	4597	„	„	„
Tjimanoeck	5620	„	„	„
Tjissalak	5787	„	„	„
Tjileboet	5787	„	„	„
Tjibodas	4660	„	„	„
Tjitaroem	5775	„	„	„
Tjikembang	8015	„	„	„
Tjisondari	8039	„	„	„

It maintains the following lines:

- a. the Java—Hongkong—Saigon Line, which, however, as a result of the limited rice-export at Saigon, does not run regularly.
- b. the Java—China Line, a monthly service between the following ports: Sourabaya, Semarang, Batavia, Hongkong, Amoy, Shanghai, Dalny

back to Amoy, Hongkong, eventually Banka, Billiton to Batavia, eventually Cheribon, Semarang and Sourabaya,

- c. the Java—Japan Line, whereby the following ports are called at:
Batavia, Cheribon, Semarang, Sourabaya, Macassar, eventually Balikpapan, Hongkong, Miike, Yokohama, Kobe, Moji, back to Hongkong, eventually Balikpapan, Macassar, Sourabaya, Semarang, Batavia.
- d. the Java—Pacific Line, a combined service of the Java—China—Japan Line, the „Stoomvaart Mij. Nederland” and the „Rotterdam Lloyd”, under management of the J.C.J.L.

It maintains a monthly service to San Francisco and has the following route: Sourabaya, Semarang, Batavia, Macassar, eventually Balikpapan, Menado, Nagasaki, San Francisco.

*The „Koninklijke Paketvaartmaatschappij”,
(Royal Packet Navigation Company)*

A regular traffic communication between the various parts of the extensive Archipelago, which forms the Dutch territory, must be considered as one of the first requisites for an efficient Government and as the most necessary means for bringing these countries to an economical development.

The successive Governments, also, have felt this and have always tried to provide for this need.

In former years the maintaining of certain services and the carrying of the mail were contracted for by means of free tenders. For a long time the transport has been in the hands of the Dutch East Indian Steamship Company, a corporation working with English capital.

In 1888, for the first time, negotiations were opened with a Dutch concern for the maintenance of mailservices in the Archipelago for the years 1891-1895, which lead to a contract with the Directors of the „Mij. Nederland” and of the „Rotterdam Lloyd” and the founding of the Royal Packet Navigation Company.

The agreement with this Company was each time increased and the one now in force is valid until 1925. It stipulates, among other things, that against a fixed compensation the mail shall be transported on the lines of the Company, while the Government pledges itself to transport state passengers, goods and monies exclusively with the ships of the K.P.M.

On the other hand the Company pledges itself, among other things, to run a certain number of fixed lines (under the present contract 30) with a fixed number of trips for each line.

The Company also maintains various services not under contract, among which are some foreign lines, namely the China Line, the Java—Australia Line and, since November, 1919, the Java—South America Line.

On the China Line a monthly service is maintained from Singapore to Hongkong, Amoy and Swatow, from which the return-trip is made to Singapore and hence to Belawan-Deli and Penang for the discharging of cargo and disembarking of coolies.

The Java—Australia Line dates from 1911 and is subsidized by the Dutch East Indian Government.

A monthly service is maintained from Batavia, Semarang, Sourabaya to Thursday Island, Brisbane, Sydney and Melbourne and eventually other ports.

The Java—South America Line, an enterprise of recent date, was founded for the purpose of transporting the Dutch East Indian products, especially sugar, directly to Chili and Peru and to carry fertilizers as return-load.

Ports of destination are Valparaiso, Callao and eventually other ports in Chili and Peru.

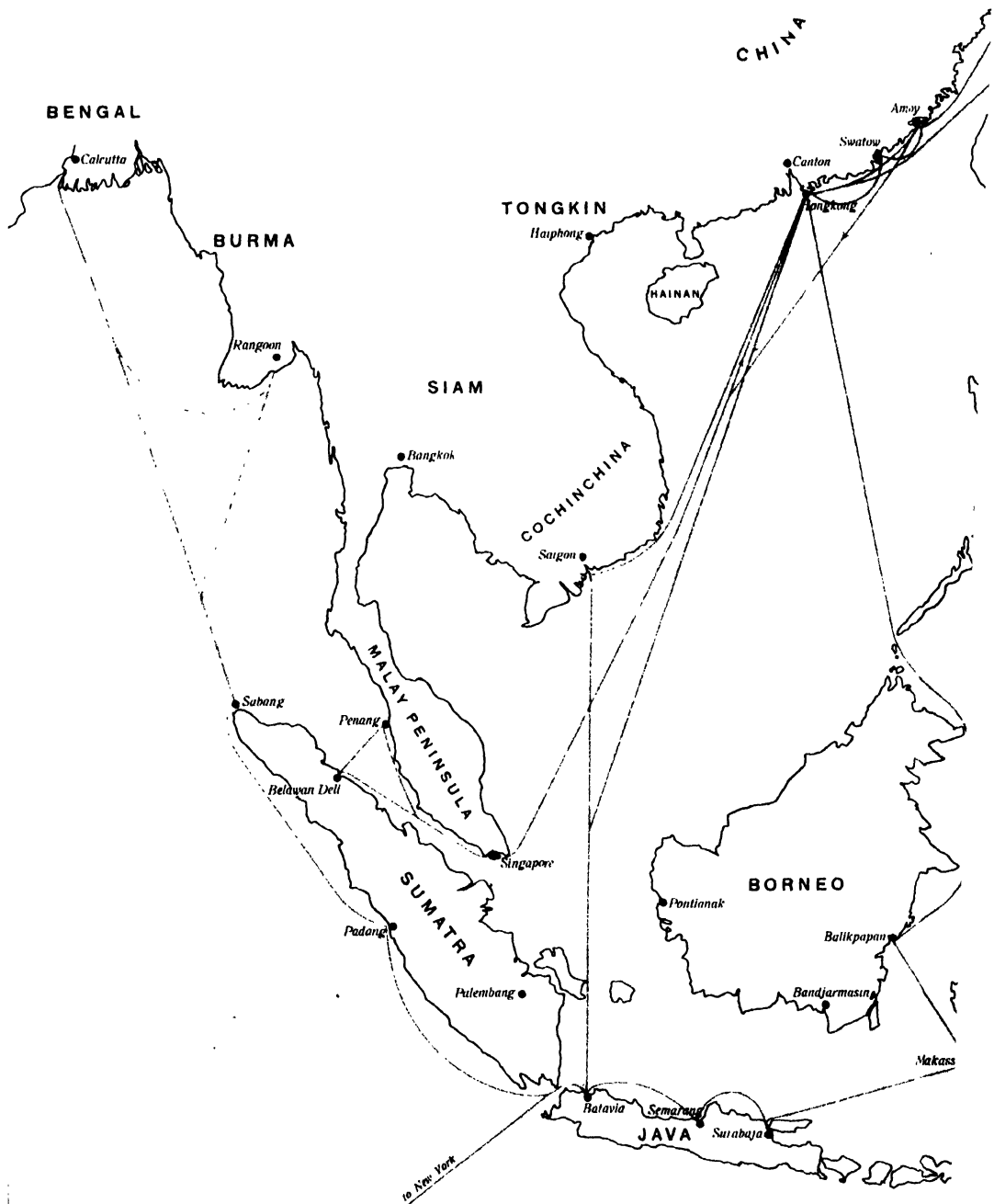
For all these lines a great number of ships is necessary, so that the fleet of the Company is very extensive. It consists of the following steamers :

Fleet of the Company.

Ships	Gross tonnage	Ships	Gross tonnage
<i>Passenger ships.</i>			
1 Plancius (being built)	5600	21 Van der Wijck (being built)	± 2900
2 Houtman	5041	22 Rumphius	2537
3 Tasman (being built).	5000	23 Baud	2383
4 Barentsz.	4743	24 Camphuys	2383
5 Roggeveen	4687	25 Rochussen	2383
6 Bontekoe (being built)	4600	26 Van den Bosch . . .	2382
7 Zwartenhondt (being built)	4600	27 Van Riebeeck	2294
8 Van Cloon	4519	28 De Klerk	2076
9 Van Overstraten . .	4482	29 Van Riemsdijk . . .	2076
10 Melchior Treub . . .	3458	30 Van Lansberge . . .	1917
11 Van Linschoten . . .	3064	31 Loudon (motor boat)	1874
12 Van Rees.	3050	32 Mijer („ „)	1873
13 Van Waerwijck . . .	3040	33 Siberg („ „)	1871
14 Van der Hagen . . .	3033	34 Mossel	1859
15 Van Neck	3027	35 Duymaer van Twist.	1807
16 Van Heemskerk . . .	2986	36 Van Noort	1805
17 Pijnacker Hordijk . .	2982	37 Schouten	1784
18 Van Imhoff.	2980	38 De Weert	1784
19 Sloet van de Beele .	2976	39 Buyskes	1780
20 's Jacob.	2907	40 Elout.	1775

REGULAR DUTCH STEAMSHIP-LINES IN THE MIDDLE-EN FAR-EAST

(except inter-insular services)



Ships		Gross tonnage	Ships		Gross tonnage
41	Van Hoorn.	1734	75	Siak	1543
42	Swaerdecroon . . .	1700	76	Siam	1543
43	Reyniersz	1697	77	Bengkalis	
44	De Haan	1695		(motor-boat)	1053
45	Van Swoll	1625	78	Boelongan	
46	Van Outshoorn . .	1599		(motor-boat)	1053
47	Maetsuycker	1397	79	Benkoelen	
48	Coen.	1367		(being built)	± 1000
49	Reael	1363	80	Bintoehan	
50	Both.	1360		(being built)	„ 1000
51	De Eerens	1323	81	Atjeh	702
52	Janssens.	1318	82	Singkara	622
53	Reynst.	1275	83	Singkep	615
54	De Carpentier. . .	1212	84	Singaradja	615
55	Van Diemen	1211	85	Singkel	615
56	Van der Capellen.	1008	86	Singkawang.	589
57	G. G. Daendels . .	1008	87	Singapore	585
58	Van Goens.	1007	88	Sembilan	
59	Speelman	1007		(motor-boat)	372
60	Alting	990	89	Indragiri.	346
61	Van der Lijn. . . .	978	90	Sampit.	345
62	Van Hogendorp. . .	635	91	Koemai	345
63	De Kock	634	92	Donggala	332
64	Merkus	629	93	Menggala	332
65	Valentijn	530	94	Benoa	331
66	Van der Parra . . .	506	95	Kalmoa	331
67	Brouwer	482	96	Brandan.	316
			97	Sepoetih (motor-boat)	106
<i>Cargo boats</i>			<i>Tug- and Salvage-boat.</i>		
68	Ombilin	2658			
69	De Greve.	3016	98	Dordt	191
70	Le Maire.	2876			
71	Van Spilbergen . . .	2868	<i>Sternwheel-steamers.</i>		
72	Siaoe (being built). .	± 1700	99	Kapoeas.	153
73	Sigli (being built). .	„ 1700	100	Negara	101
74	Tarakan (tank-boat)	1642	101	Ogan II	69

Total Gross Tonnage 184.283.

Besides the foreign lines already named, mention should also be made of the following:

The *Burns Philp Line*, an Australian navigation company, which maintains a monthly connection between Sydney, Java and Singapore, whereby the following ports are called at: Sydney, Brisbane, Cairns or Townsville, Thursday Island, Port Darwin, Sourabaya, Semarang, Batavia and Singapore, by the steamers „Mataram” and „Montoro”, measuring respectively 3273 and 4057 Gross Register tons. They have accommodations for the transport of passengers and freight.

The *West Australian Joint Service*, which maintains a monthly service with two steamers between Singapore, Java and West Australia, with Fremantle as final destination.

The *Union Steamship Company of New Zealand Ltd.*, which for a number of years has given opportunity about three times a year to ship capoc from Java to New Zealand.

The *British India Steam Navigation Company Ltd.*, and *Asiatic Steam Navigation Company Ltd.*, which chiefly bring sugar from Java to British India.

Postal, Telegraph and Telephone Service.

Postal Service.

The real organisation of the postal service dates from 1862, in which year regulations were introduced in the postal service, by which the Government monopoly for the mail-transport was regulated and a uniform rate of postage fixed for communications from the interior.

The first stamps were issued in 1864 and were of one kind with a value of f 0.10.

It has been possible to especially improve the postal traffic with Holland since the opening of the Suez canal in 1871. In 1875 a contract was made with the „Stoomvaartmaatschappij Nederland” and with the „Rotterdam Lloyd” for a regular mail-service between Holland and the Indies, which contracts were renewed in 1908. Each of these companies maintains at present a regular fortnightly mail-service.

In 1877 the Dutch East Indies joined the Universal Postal Union.

From 1881 dates the opportunity for collecting bills. In 1892 foreign money orders and receipts were allowed to those countries which had joined the agreements of Rome with respect to these services.

Later on separate agreements were also entered into with other countries, e.g. in 1905 with Great Britain and Ireland, in 1911 with the Straits Settlements in 1912 with the Australian Commonwealth and in 1919 with China.

To the United States of America remittances of this description may be sent via Holland.

In 1892 was introduced the so-called „ambulante dienst” on the state railways in Java, whereby, under supervision of the train-conductor,

ordinary mail is carried between places where there are no post-offices nor auxiliary offices. At present post-office vans run both ways between Merak and Batavia, between Batavia and Bandoong, between Batavia, Cheribon and Djokjakarta, as well as between Bandoong, Djokjakarta and Sourabaya.

The railway post-office between Bandoong and Batavia is also an exchange office for the outgoing foreign correspondence.

Finally the state- as well as private railways and most of the tramways are used for carrying ordinary mail under the care of a postoffice or railway employee.

The parcel post-service was first regulated in 1893. At first parcels were only carried by rail, steam-tramways, by the ships of the K.P.M. and other regular steamship-services and postcars. The tariffs were fixed according to the distance and the various means of conveyance. In 1896 the means of conveyance were considerably increased by the opening of various routes, which were covered by automobiles, postmen, couriers or proas.

Since 1904 are also allowed parcels of declared value and for delivery against cash payment, both to a maximum amount of f 250.—.

After the introduction of the inland service the foreign parcel post-service was also taken in hand. The Parcel Post Convention drawn up in Vienna in 1891 was signed by the Indies. Foreign parcels to a weight of from 3 to 5 K.G. are allowed. Later parcels of declared value and those for delivery against cash payment were also admitted.

In 1895 opportunity was given to make arrangements with countries which had not joined the International Parcel Post Convention, the result of which was the agreements with the Straits Settlements (1901 and 1916), Hongkong (1903), Australia (1913), the Philippines (1917) and the United States of America (1918).

At the convention of Rome in 1906, the regulations of which are still in force, the super rates were abandoned which so far had been levied on the parcel post to Holland and other countries which had joined the Universal Postal Union.

At the present time the rates fixed by this convention are in force for correspondence with Holland and other countries of the union.

Only for delivery per direct sea-route (sea-post) with Holland per the steamship companies „Nederland” and „Rotterdam Lloyd” has a lower rate been introduced, for letters from the Dutch East-Indies to Holland 10 cts. for a letter of not more than 20 G. and $7\frac{1}{2}$ cts. for every additional 20 G., postcards 5 cts., printed matter and documents 1 ct. and samples 2 cts. per 50 G. with a minimum charge for documents and samples of 5 cts. and with a maximum weight of 2 K.G. for printed matter, while for letters of a weight not exceeding 20 G., coming from or intended for military men under the rank of officer, per sea-post the rate is 5 cts.,

In normal times a letter from Java to Holland and vice versa reaches its destination within four weeks.

Every two weeks there are five opportunities for the exchange of correspondence with Europe by means of Dutch, French, German and English mail steamers. ¹⁾

One boat of the steamship company „Nederland” leaves Java every fortnight, in normal times, via Singapore, Belawan, Sabang, Colombo, Port Said, Genoa and other ports to Amsterdam and back, while there is a similar service to Rotterdam and back, by the „Rotterdamsche Lloyd” via Padang, Colombo, Port Said, Marseilles and other ports.

Besides many additional sailings, which provide opportunities for the conveyance of the mails, there is a regular monthly delivery to and from Australia by means of the steamers of the „Koninklijke Paketvaartmaatschappij”, while the Java—China—Japan Line maintains a monthly service between Java, Celebes, China and Japan and back via Singapore.

In 1907 automatic mailbag-catchers were set up at stations and halting-places, where the express does not stop, making it possible to despatch and receive mails also at these places.

The establishment of regular steamship-services also has greatly facilitated the postal traffic. At the present time a regular steamship service is maintained between the various ports in Java and the Outlying Possessions. On several of the K.P.M. steamers auxiliary post-offices are established, for the purpose of including even the smallest places in the postal traffic. The Government has made a contract with the K.P.M. for the conveyance of mails, while the captains of other private vessels are compelled to carry the mails, for which a commission is paid in proportion to the weight of the bags.

Places not situated on the sea, railroads or tramways receive and deliver the mail by means of automobiles, port-carts, couriers, pack-horses, mail-carriers or post-proas or also by means of the district-posts.

In 1918 new regulations were fixed for the inland postal service.

The postage for letters is now 10 cts. to a maximum weight of 20 G. and 7½ cts. for every additional 20 G.

Post cards cost 5 cts., those with reply paid 10 cts., whether their destination be at home or abroad. They bear stamps with the same impression as postage stamps and the headings are in Dutch, French and Malay.

There are 18 kinds of postage stamps, from ½ cent to 2½ guilders. They are divided into two series, the first, consisting of stamps under 10 cents, have a large figure in the centre; those of the second serie have the picture of H.M. the Queen. The kinds most in use can also be ob-

¹⁾ This was the case before the outbreak of the European war, since which the sailing of German mail-boats has been discontinued.

tained in book-form. To prevent the so-called „cleaning” of the stamps new stamps have been introduced in which there is more white and in which the colours bleach out when an attempt is made to erase the post mark.

Of the excess postage stamps there are now 9 kinds in use, from 2½ cents to 75 cents; of the stamped envelopes 5 kinds, from 10 to 22½ cents, with an additional ½ cent for the envelope.

Postal values may be obtained at all post-, branch-, auxiliary post- and railway post-offices and small quantities of the kinds most in use at the order-houses and all halting-places of the State railways in Java, where no post- or auxiliary post-office is established, also from the first officers and assistant pursers of all passenger-ships and sternwheel-steamer of the K.P.M.

The newspaper-postage is only ½ cent for weights not exceeding 25 G., while for the delivery of other printed matter, documents and samples the rate is 1 cent for each weight of 50 grams, with a minimum charge of 5 cents for documents and 2½ cents for samples. The levying of postage on newspapers delivered by publishers may under certain conditions take place by subscription.

For the payment of one guilder per month lockboxes are at the disposal of the public at various offices.

Ordinary mail may be offered for delivery by a delivery book or by some other accompanying writing. For the acceptance of each piece of mail offered in this way there is a fixed tax of one cent.

Registration is allowed on payment of a fixed charge of 10 cents at all post-, branch- and auxiliary post-offices, also, as far as ordinary letters and post-cards are concerned, at the railway post-offices of all stations and halting-places; registered letters with declared value to a maximum amount of f 5000 may be sent at post- and branch post-offices and to an amount of f 250 at auxiliary offices.

For declared value 10 cents extra per 150 guilders is paid. In case of loss in the inland traffic, also in case of „force majeure”, compensation is granted for ordinary registered articles and for total or partial loss for letters of declared value.

Service-mail, containing documents, which can be replaced with difficulty or not at all, may be sent advised. Advised mail is handled in the same way as registered mail. Compensation is not allowed for advised mail.

Reply coupons, which are admitted in the traffic with many countries, may also be used for inland correspondence. The price is 14 cents. They can be exchanged for postage stamps of 12½ cents.

The maximum amount of postal money orders is fixed at f 1000— at all post-offices and f 250.— at auxiliary post-offices. The charge is 12½ cents for each 25 guilders or fraction thereof.

Telegraphic money-orders may be sent to a maximum amount of

f 500.—, while the total amount of the receipts entered in one note, also, may not exceed the amount of f 500.—.

Since 1916 it has also been possible to despatch sums to a maximum of f 10.— by means of postal orders, which may be obtained up to certain amounts at all post-, branch- and auxiliary post-offices. The charge is 10% of the amount written on the order, with a minimum of 1 cent.

The despatch of registered matter for cash payment on delivery, is allowed to the amount of f 1000.— at the general post-offices and f 250.— at auxiliary offices.

For parcel-post a uniform tariff has been fixed, but a different scale of charges is in force between Java and Madura on the one side and the Outlying Possessions on the other.

In order to accelerate as much as possible the handling of the European mails, more especially of the Dutch mails, two sea-offices were established during the course of 1915; one between Singapore and Batavia and the other between Padang and Batavia. The mails are carried by motor-vans between Tandjong Priok and Batavia.

A review of the postal traffic during five years follows below.

Inland Postal Traffic.

Years	Number of stamped letters	Postcards	Service letters	Printed matter	News-papers	Samples
1914	10.805.936	5.787.873	4.502.565	8.460.855	11.456.854	295.519
1915	10.849.571	5.715.786	5.519.821	8.189.064	12.215.814	218.955
1916	11.224.527	6.598.152	5.625.584	6.524.851	14.446.198	219.549
1917	12.227.519	7.576.070	5.991.427	6.758.069	15.254.778	184.982
1918	14.170.650	8.928.758	6.657.488	6.659.068	16.055.558	225.750

Years	Documents	Registered matter		Postal money-orders		Parcels
		Service	Ordinary ¹⁾	Number	Amount in 1000 glds.	
1914	984.159	774.579	1.775.514	1.027.581	42.255	597.710
1915	1.055.858	1.000.558	1.615.274	1.252.887 ²⁾	46.484	440.751
1916	1.214.086	945.139	1.652.625	1.455.996 ³⁾	55.564	485.862
1917	1.477.918	1.045.651	1.810.577	1.621.151 ³⁾	67.490	514.227
1918	1.713.400	1.088.561	1.857.914	1.794.446 ³⁾	78.170	574.585

¹⁾ Including registered articles with declared value and those for C.O.D.

²⁾ Including postal money-orders regarding registered matter and parcels C.O.D., also those regarding collected on receipts.

³⁾ Including postal orders and money-orders regarding registered matter and parcels C.O.D., also the regarding receipts monies.

Sent Abroad ¹⁾

Years	Number of stamped letters	Postcards	Service letters	Printed matter	News-papers	Samples
1914	1.811.017	317.278	15.078	494.780	—.—	58.818
1915	2.009.904	355.602	12.755	488.241	—.—	66.547
1916	1.999.530	302.120	15.221	456.520	—.—	50.557
1917	1.985.995	345.811	15.481	557.810	—.—	51.649
1918	1.697.456	262.197	15.457	410.755	—.—	84.981
Years	Documents	Registered matter		Postal money-orders	Parcels	
		Service	Ordinary ¹⁾		Holland	Other countries
1914	23.296	—.—	445.742	96.240	14.470	9.449
1915	28.964	—.—	489.457	144.129	17.509	8.095
1916	20.755	—.—	447.785	112.055	10.052	10.216
1917	20.995	—.—	454.717	60.425	2.629	9.995
1918	54.320	—.—	555.257	47.585	1.150	8.765

Received from Abroad ¹⁾

Years	Number of stamped letters	Postcards	Service letters	Printed matter	News-papers	Samples
1914	—.— ¹⁾	—.— ¹⁾	—.— ¹⁾	—.— ¹⁾	—.—	—.— ¹⁾
1915	—.— ¹⁾	—.— ¹⁾	—.— ¹⁾	—.— ¹⁾	—.—	—.— ¹⁾
1916	2.878.057	461.149	11.510	3.907.241	—.—	108.446
1917	1.868.250	596.125	9.789	2.608.892	—.—	41.514
1918	2.380.521	545.954	5.798	2.089.191	—.—	55.595
Years	Documents	Registered matter		Postal money-orders	Parcels	
		Service	Ordinary ¹⁾		Holland	Other countries
1914	—.— ¹⁾	—.—	—.— ¹⁾	9.722	91.040	54.727
1915	—.— ¹⁾	—.—	—.— ¹⁾	9.404	67.975	52.772
1916	26.949	—.—	571.145	8.425	57.071	54.806
1917	16.575	—.—	292.081	5.757	9.818	41.511
1918	18.174	—.—	580.876	5.015	2.590	51.415

¹⁾ The decline of the postal traffic with foreign countries due to the European war.

²⁾ Including postal money orders regarding registered matter and parcels C.O.D., also collected on receipts.

³⁾ The foreign registered service mail is included in the foreign.

⁴⁾ Data lacking.

⁵⁾ The number of registered articles without declared value C.O.D. is already included in the number of unregistered articles.

Yearbook of the Netherlands East-Indies

Telegraph Service.

The first telegraphic connection was established in 1856 between Batavia and Buitenzorg. In 1858 the line Buitenzorg—Cheribon—Semarang—Sourabaya was completed. The first regulation concerning the construction of telegraph lines were made in the same year, being superseded in 1876 by regulations for the construction and use of telegraphs, which, except for a few revisions, are still in force.

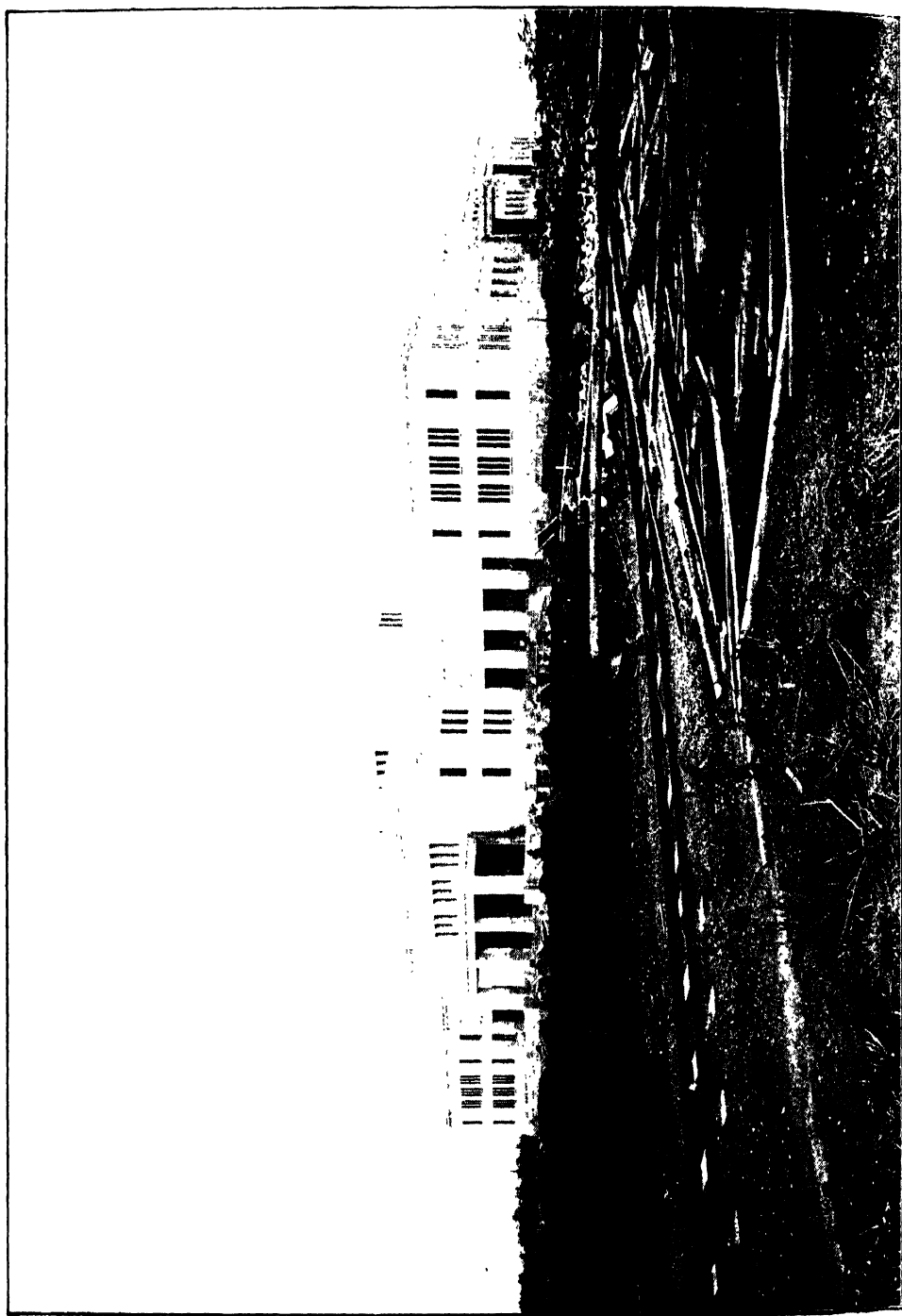
According to these regulations no telegraph lines may be constructed and opened to the public without the permission of the Government, except those on the property of a private individual or an estate, for the sole use of the owner. This exception does not refer to telegraphs and telephones, of which the instruments at the terminal points are not reciprocally connected by wires or leads (radio-connections).

In the interest of the country the Government can take temporary possession of private telegraphs or may have them removed.

Subsequently the net of telegraphs has been continuously extended. The necessary attention has also been paid to overseas connections. Great difficulties were met with in constructing the lines on the land as well as in laying the submarine cables. The difficulties of line construction were overcome by the use of living supports (chiefly capoc trees), while the use of a Government cable ship, the „Telegraaf”, did much for the laying of cables, and contributed considerably to the obtaining of good results. Among the cables laid by this ship may be mentioned the connections from Java via Singaradja to Macassar, from Balikpapan to Menado and from Weltevreden via Tandjongpandan to Pontianak.

Figures below give a review of the extension of telegraph lines and cables during a period of 5 years.

	Length of wire		
	Overhead connections in K.M.	Submarine cables in K.M.	Other cables and subteranean lines in K.M.
1914	23.375	9.356	488
1915	24.438	9.467	700
1916	25.273	9.939	774
1917	26.834	9.941	783
1918	27.447	9.939	763



Lanchow-Peking Station is now at construction

By the establishing of the telegraphic connection between Java and Singapore in 1870 the Dutch East-Indies were connected with the world-wide telegraph system.

The connection Java (Banjoewangi)—Australia (Port Darwin) followed in 1872, while a second similar connection was completed in 1879 after permission had been granted during the previous year. Furthermore cables have been laid between Singapore and Banjoewangi (1879), Penang—Medan (1891) and Batavia—Cocos Islands (1908).

In 1904 the German Netherlands Telegraph Company (Deutsch—Niederländische Telegraphen Gesellschaft) was established, which laid a cable from Menado via the Carolinas to Guam and from the Carolinas to Shanghai, the first being connected with the American Pacific cable to San Francisco.

As a result of an agreement with the French Government the cable Pontianak—Saigon was laid to form a connection between Netherlands India and French Cochin China and was opened to the public in 1916.

This cable has been out of use since 1913.

With regard to the connection of the Dutch East-Indies with the world telegraphic system, it was resolved in 1870 to join the international telegraph convention at Rome, which was formed at the international telegraph congress held in that city from December 1st, 1871 to January 14th, 1872.

Owing to the increasing number of international connections, as well as the rapid progress of the Outlying Possessions in the field of commerce and industry, the demands which were put on the telegraph service became steadily greater.

The extension of the telegraph system was vigorously taken in hand, and efforts were made as much as possible to establish two or more connections between the same places, in order to ensure communication in case one of the lines became unworkable.

The original plan was to connect up the islands by cables, but the results obtained since then with radio-telegraphy have opened up new possibilities in this line.

In 1910 a start was made by the Government in the erection of radio-telegraph stations at Sabang, Sitoebondi, Koepang and Ambon.

The station at Sabang exclusively for communication with ships, was opened in September, 1911.

At Weltevreden a station has been made available by the Naval Department for marine signalling, but it has also been opened for the use of navigation in general.

Permission has been given to the Bataafsche Petroleum Company to establish wireless stations at Balikpapan and at Tarakan (East Coast of Borneo) for their own use. At the same time they were authorized to exchange messages with ships at sea belonging to the Royal Packet

Navigation Company and the steamship-companies „Netherland” and „Rotterdam Lloyd”.

In Bandoong a wireless station has been erected, with which tests are being made to establish a wireless connection with Holland. In 1919 this connection was so far established that radiograms sent from Bandoong could be received in Holland.

On February 1st, 1911 the Dutch East-Indies joined the international radio-telegraphic convention, concluded November 3rd, 1906 in Berlin, and in 1912 the international radio-telegraphic convention concluded in London, which came into force in July, 1913.

Gradual improvements have also been made in the matter of telegraphic connections. Where originally the Morse apparatus was generally used, and for cables the mirror apparatus of Thomson, since 1905 the syphon recorder apparatus has been worked on busy lines, while in 1916 the Siemens and Halske rapid telegraph apparatus was installed for communication between Weltevreden and Sourabaya. Between Batavia and Weltevreden the Hughes instrument is used. To increase the capacity of the most important lines the recorder instrument is worked on the duplex system.

Already in 1875 the post and telegraph services were amalgamated to facilitate more rapid communication with small towns, while in still smaller places telephone offices, since April, 1912 called branch telegraph offices, were instituted, which form a part of the telegraph service in its full extent.

Telegraph tariffs, both for inland and foreign messages, have several times been reduced. In 1913 a uniform tariff was instituted for foreign telegrams throughout the colony.

In 1900 letter-telegrams were introduced for correspondence with Holland.

These telegrams are sent to the last port of call in the Dutch East-Indies by the homeward bound mailsteamers of the „Netherland” and „Rotterdam Lloyd” Companies; the ships then take the telegrams, as letters, to Genoa or Marseilles, whence they are transmitted by telegraph to the place of destination in Holland. A similar service has been introduced from Holland to the Indies.

From January 1st, 1913 dates the regulation of deferred telegrams in communication with those foreign countries which permit this service and to which the telegraph tariff is not less than f 0.50 per word.

Here as well as abroad they are transmitted after the despatch of ordinary telegrams. If they have not reached their destination within 24 hours, however, they are handled as ordinary telegrams.

For press telegrams, also, a lower tariff has been introduced; for

inland communication this amounts to only one-fifth of the tariff for ordinary telegrams.

They may be sent by any person in the inland traffic, but must be addressed to a newspaper or periodical which has been authorized by the chief of the Postal, Telegraph and Telephone Service to receive such telegrams.

A review of the telegraphic traffic during the last five years follows below.

Telegraphic traffic.

	Number of telegrams			
	Sent inland ¹⁾	Exchanged with abroad		
		Ordinary tel.	Deferred tel.	Press tel.
1914	1.220.776	255.964	31.966	173.382
1915	1.269.172	153.852	126.223	166.346
1916	1.439.173	162.683	174.813	205.093
1917	1.558.481	191.517	147.788	330.157
1918	1.919.419	279.018	145.752	366.799

	Government telegrams		Wireless telegrams	
	Number		Sent	Received
	Telegrams	Words		
1914	84.882	2.229.158	684	1.661
1915	81.867	1.919.313	306	790
1916	72.590	1.758.891	268	862
1917	77.197	1.740.661	236	731
1918	113.146	2.693.185	229	783

¹⁾ Government telegrams not included.

Telephone Service.

In the years 1883 and 1884 the first (private) telephone lines were constructed in the three chief towns of Java (Batavia, Semarang and Sourabaya). Gradually this number has increased. In 1898 it had gone up to thirty five.

The interlocal connections, of which the first, i.e. the line Batavia—Semarang—Sourabaya, was established in 1894, were also originally run by private companies.

It soon became apparent, however, that this exploitation in different hands had many disadvantages, for which reason the Government decided in 1901 to gradually take over the private enterprises.

Since then the local as well as the interlocal service has been considerably extended. At the end of 1918 almost all the telephone offices in Java were connected with the interlocal line, only the lines in South Kedoe and Banjoemas were at that time still in private hands. The Government telephone service had then the disposal of 59 local and district lines and 2 lines which are intended exclusively for long distance calls. Besides the above mentioned lines in South Kedoe and Banjoemas, there were also in the Outlying Possessions 3 telephone concessions in private hands.

Uniform tariff regulations for local traffic were introduced in 1915. The tariff for the Outlying Possessions is somewhat higher than for Java.

The construction of telephone connections for private use is allowed under certain conditions. At the end of 1918 72 permissions of this kind had been granted.

Figures below give a review of the extent of telephonic traffic and of its returns during the period 1914—1918.

	Length of wires in K.M.	Num- ber of tele- phone offices	Tele- phone sets	Number of long- distance calls	Gross receipts derived from the service	Working expenses	Net profit after de- duction of interest and depreciation
1914	85.488	148	14.093	282.506	f 2.211.874	f 1.293.440	f 509.207
1915	92.021	158	16.366	389.558	„ 2.659.615	„ 2.620.183	„ 394.510
1916	95.721	165	18.395	526.176	„ 3.144.638	„ 2.720.998	„ 423.639
1917	113.797	173	21.873	558.027	„ 3.466.916	„ 2.996.654	„ 470.262
1918	119.139	189	24.790	751.222	„ 4.217.931	„ 3.712.659	„ 505.271

THE DUTCH EAST INDIAN HARBOURS

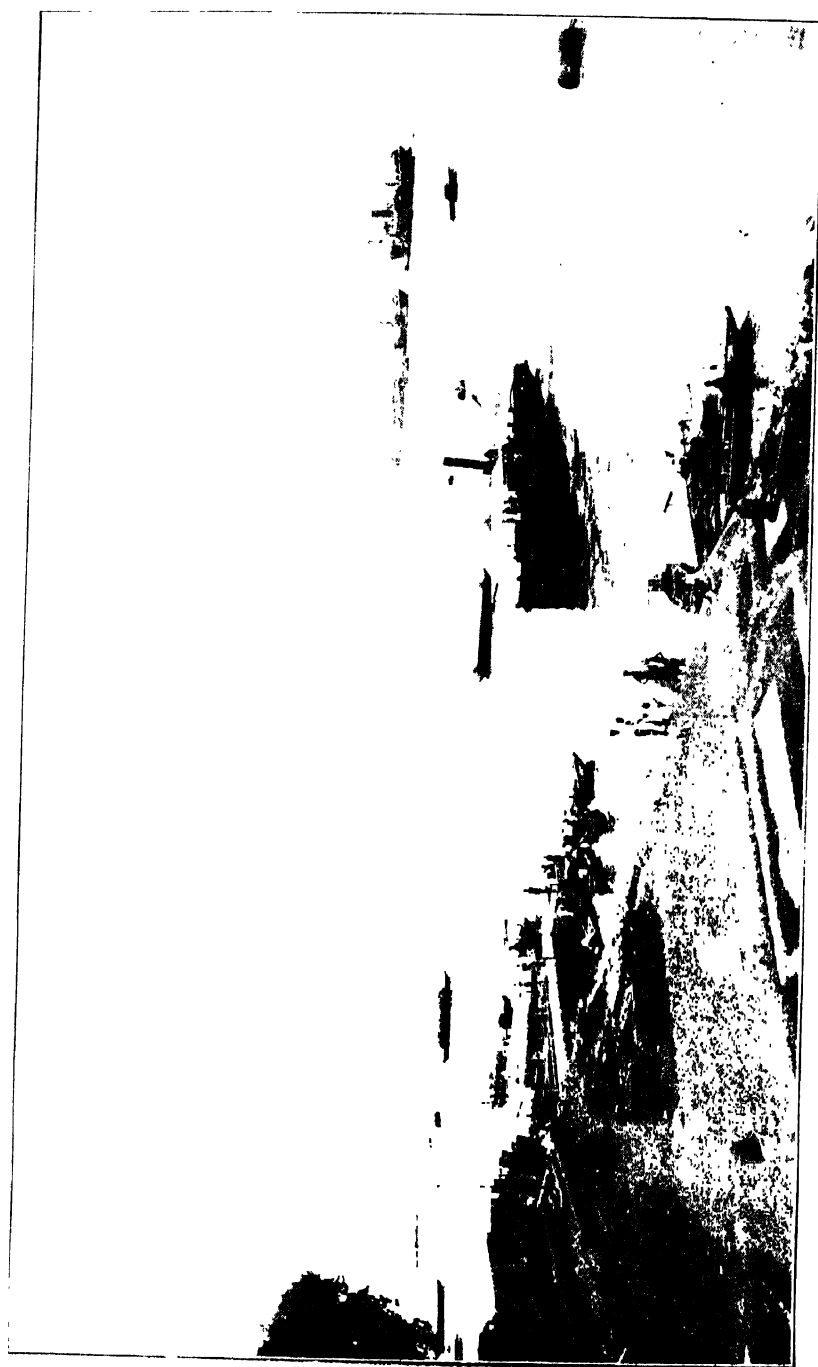
I. General Review

II. The large harbours

III. The harbour of Sabang

IV. The middle-sized harbours

V. The management and working of the harbours



Taniguchi Peak - Old & New



CHAPTER XIII.

Dutch East Indian Harbours

I. General Review

1. Introduction.

The total coastline of the islands of the Dutch East Indian Archipelago about corresponds with the circumference of the earth. Scattered along this coastline are found some 500 large and small harbours, concerning which the following may be told.

In former centuries, when shipping was still entirely indigenous and took place only with vessels of very moderate dimensions and a light draught, the rivermouths and creeks formed natural harbours, which offered a safe anchorage and moreover afforded an opportunity to either bring goods farther from the interior or to take them there.

Where an entrance of this kind was lacking and where, nevertheless, settlements of people had created commerce and shipping, an attempt was made to seek shelter in bays and on roadsteads. At some suitable spot the vessels were simply run up on the beach.

Afterwards, when the vessels took to international lines and began to be of larger dimensions, the rivermouths for the most part proved worthless for the new ships with their heavier draught because of the bank-, sand- or port-bar formation.

They were therefore forced to make use of favourable tides as much as possible or to drop anchor outside of the harbour.

The latter method met with little difficulty since in these regions are found many stretches of water in the neighbourhood of rivermouths, sheltered by small islands, peninsulas (tandjoengs) or reefs, in which ships can find a comparatively safe anchorage and where the transshipment in Native proas, which bring the goods to and from the shore, can take place without much trouble.

At some places, especially favourably situated for commerce, the

traffic increased to such an extent, however, that it became profitable to improve the harbour-entrances. Originally this was done by laying dams across the shallow places vertically to the coast and by dredging a passage between them.

This artificial condition, however, required a continuous upkeep, for generally the river at some seasons brought up so much mud, that again and again banks formed themselves anew for the newly shaped rivermouth and the coastline replaced itself in the direction of the headends of the dikes.

Repeated dredging and lengthening of the dikes were the results of this; so originated those peculiar harbourcanals, which are still found, for instance in Batavia, Semarang, Sourabaya, Pasoeroean and elsewhere.

Near the mouth were stationed beacons and lighthouses in the interest of shipping, while, to insure the collecting of import and export duties and excises, custom-offices („Boomen”) were also constructed there.

At these last establishments all proas had to land, sometimes entirely to be unloaded, before receiving permission to sail on to storages located above-stream. As a result of the dike-lengthening and coast-extension described above, the location of the custom-house became too unfavourable for a reasonable expansion of the commercial field, and a branch office was therefore established more seawards, which was called „Kleine Boom” to distinguish it from the old office, now called „Groote Boom”.

Where no harbour existed and the vessel had to remain lying at anchor in the open sea or in the bay, simple piers were built out into the sea, at which the vessel itself or the proas, which took care of the goods transport, could land.

The custom-house was then built at the shore end of the landingplace.

When the vessels assumed increasingly larger proportions and steam-navigation had been introduced in the middle of the last century, while commercial traffic increased enormously in the rapidly developing provinces, such confusion arose in some harbours and such stagnation and delay resulted in the traffic, that inevitably radical improvements had to be made.

At first an attempt was made to master conditions by extending the storage-space, increasing the number of landingplaces, enlarging the proa-fleets and similar means. These measures, however, proved to bring no effective solution and gradually the conviction grew that this could only be found in a direct, well equipped connection between quay and ship.

The herewith accepted principle of direct transshipment, with which the third stage of harbour-development was entered upon, brought with it the construction of quay-walls and piers situated at deep waterfronts.

At the same time shipping was freed from the custom-house regulations, which had so long been in force, by no more having the goods taken to a certain specified place, the „Boom”, for inspection, but of directing the custom-house officials in the performance of their duties, to the

goods, which were removed from the ships and stored in sheds and neighbouring storage-places alongside the quays.

Along this line, taken ten years ago under the guidance of G. J. de Jongh, at that time Director of Municipal Works at Rotterdam, and Dr. J. Kraus, ex-professor of the Technical University of Delft, the Dutch East Indian harbours are proceeding to become entirely up-to-date enterprises.

The goal striven for is:

- a.* in a technical sense: harbour-basins accessible at all times to the newest vessels, dimensions for the present fixed at 1000' length, 100' width and 40' draught, very well equipped quays and godowns, with direct connection of railroad, ordinary road and proa-transport: the obtaining in good time of extensive tracts for expansion and for housing the people connected with the harbour, making use of the very best social and hygienic measures.
- b.* in a financial sense: the so-called profitable basis, i.e. that the harbour without making any profit pays its own expenses, on this understanding, however, that this in itself just principle is not so strictly carried out as to injure the interests of the harbour and the rear land;
- c.* in the sense of management: the uniting of all those concerned in the harbour into a harbour council, which, as a central organisation in the name of the Government, which remains owner of the harbour and provides all capital, manages the harbour-institution in the most liberal sense, proceeding on the principle, that free scope must be given to private initiative with regard to harbour-affairs.

2. Figures.

An idea of the significance of the Indian harbours in the last few years may be given in the first place by the following (rounded) statistics of the shipping, showing the number and the net capacity of the private merchant-vessels (steamers as well as sailing vessels and lighters) during the years 1911 up to and including 1918.

Year	Arrived ships	
	Number	Net capacity M ³
1911	106.000	81.901.000
1912	107.500	88.000.000
1913	103.100	93.081.000
1914	104.500	94.413.000
1915	106.400	89.214.000
1916	113.300	81.446.000
1917	114.900	68.382.000
1918	112.900	62.171.000

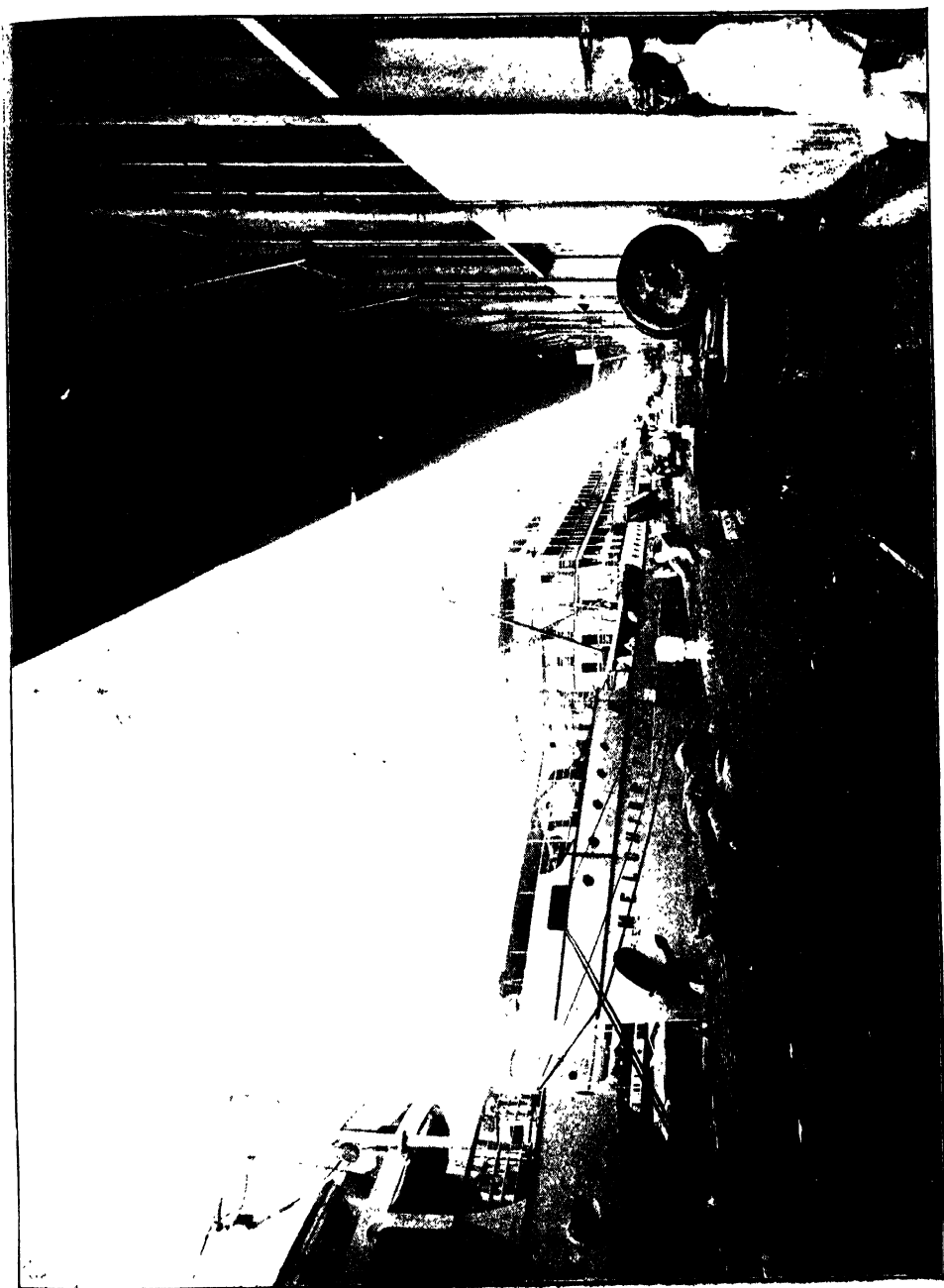
An official review of the figures concerning the value of the freight traffic (import and export) of the entire Dutch East-Indies over the years 1916, 1917 and 1918 gives the following table :

Value in millions of guilders							
Import					Export		
1916	1917	1918	To	From	1916	1917	1918
289	312	365	Java and Madura		511	457	353
116	155	166	Outlying Possessions		345	329	322
405	467	531	Total		856	786	675

In this table the Outlying Possessions are combined; a review concerning the share of each of the harbours in these provinces is given in the more detailed reports of the customs service. From the following table compiled according to these reports concerning the value of the total import and export per province in the Outlying Possessions, we can arrive at rather definite conclusions regarding the import and export of the largest harbours in these provinces. Most of these provinces have only one rather large harbour, through which comes by far the greatest part of the import and export of the province.

Thus on the East Coast of Sumatra, for instance, Belawan will draw the lion's share of the import and export. The same applies to other principal harbours such as Sibolga in the residency of Tapanoeli, Palembang, Benkoolen, Amboina and Menado in the provinces of the same name, Macassar in the Government of Celebes, etc.

It must be remarked, that the increase in value is a result not only of the increase in the quantities of goods, but also of the rise in market-prices.



Tanjung-Priok. West-side of the 1st inner harbour

Review of the value in millions of guilders (rounded) of the total import and export per province in the Outlying Possessions.

Provinces	Import			Export		
	1913	1917	1918	1913	1917	1918
Acheen	6.8	7.1	7.5	5.8	6.6	6.1
East-Coast of Sumatra . .	44.1	57.9	67.	120.2	108.3	100.
Freeport Bengkalis	0.2	0.3	0.5	0.2	0.02	0.2
Tapanoeli	2.	1.6	1.5	2.0	0.8	1.4
West Coast of Sumatra .	11.4	10.6	10.	7.6	6.6	1.9
Benkoolen	1.	0.8	0.8	0.4	0.5	0.07
Lamong Districts	0.2	0.2	0.1	1.2	0.1	0.07
Palembang	9.5	11.5	11.2	21.4	24.3	21.8
Djambi	1.1	2.8	2.2	1.6	5.3	5.2
Indragiri	1.4	1.9	1.6	2.7	4.2	4.
Free territory Riouw . . .	5.6	7.8	11.3	26.	50.4	42.
Banka	3.8	5.4	6.	1.1	3.1	1.9
Billiton	2.2	3.	2.7	2.0	10.6	10.1
W. Div. of Borneo	5.5	9.7	8.9	10.	13.8	8.1
S.E. Div. of Borneo	1.4	15.1	14.8	53.6	68.1	101.5
Bali and Lombok	3.2	1.3	1.1	6.	2.3	1.2
Govt. of Celebes	14.	9.4	12.3	18.6	14.1	8.4
Menado	7.	5.6	4.3	10.6	4.	6.2
Ternate	1.4	0.7	0.5	2.4	0.4	0.4
Amboina	1.2	1.3	1.0	2.6	1.4	0.7
Timor	0.2	0.1	0.06	0.3	0.08	0.05
Freeport Merauke	0.07	0.06	0.03	0.2	0.07	0.02

3. Classification.

The harbours, which are constructed and managed by the Government, are divided according to the amount of their import and export into:

- a. large harbours,
- b. medium sized harbours,
- c. small harbours.

ad. a. As large harbours (seven in number) are at present considered:

Tandjong Priok (Batavia)	} In the island of Java.
Sourabaya	
Semarang	
Tjilatjap	

Belawan-Deli (Medan)	}	Sumatra.
Emmahaven (Padang)		
Macassar		Celebes.

ad. *b.* Among the *medium sized* harbours are ranked:

Cheribon	}	In the island of Java.
Banjoewangi		

Bandjermasin	}	Borneo
Pontianak		

Benkoolen	}	Sumatra
Palembang		

Amboina Amboina
Menado Celebes

ad. *c.* The over 450 remaining harbours make up together the so-called *small* harbours.

II. Description of the large Harbours

A. The harbour of Tandjong Priok (Batavia).

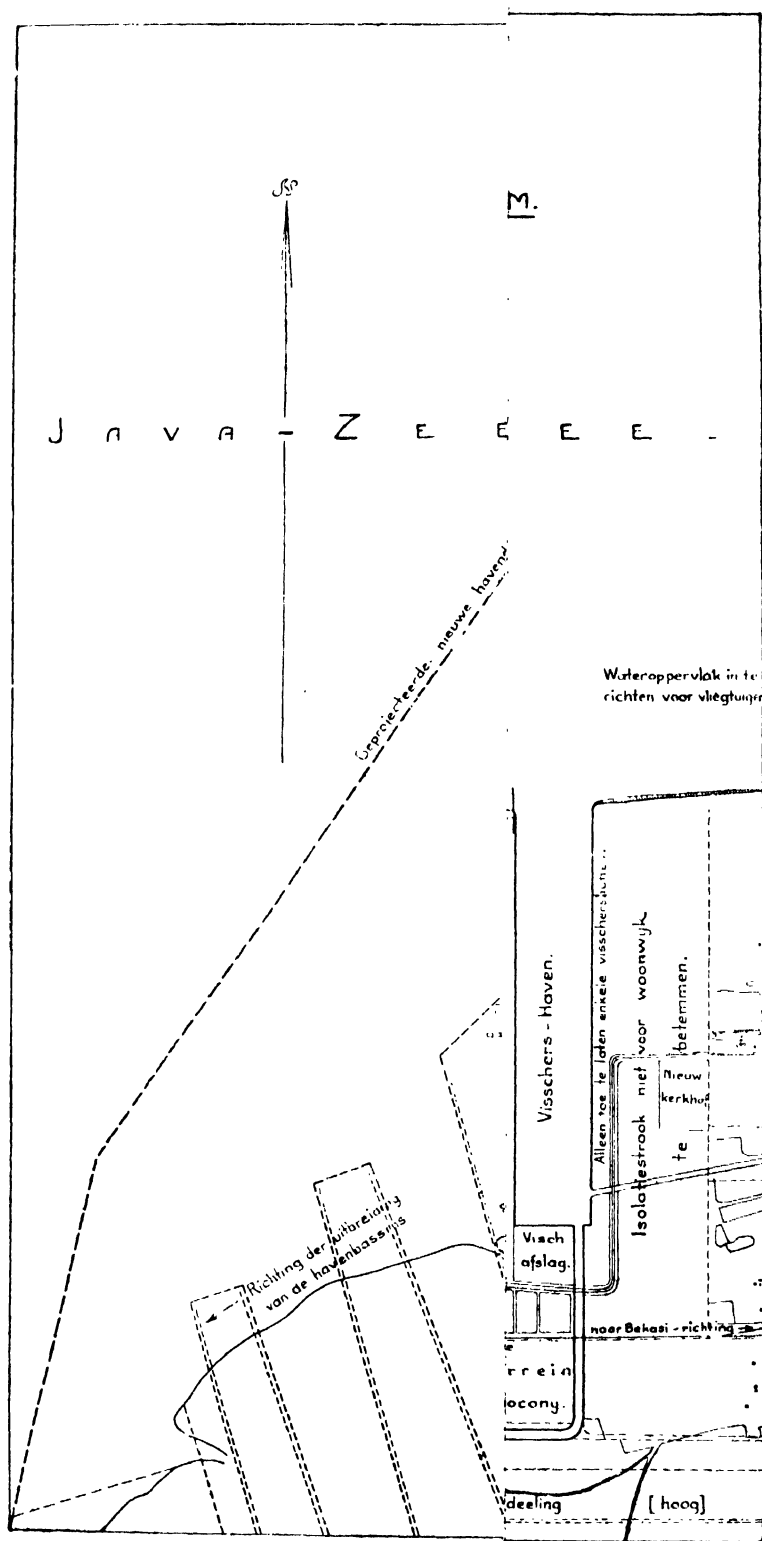
The bay of Batavia, dotted with numerous small coral islands, forms on the south side a curve between the capes of Oentoeng Djawa and the corner of Krawang, between which the distance as the crow flies is about 39 K.M., while the distance between this imaginary line and the most southern part of the bay is almost 13 K.M.

Among the rivers, which open into this bay, the chief one is the Tjiliwoeng or Batavia River, on the shores of which the capital of the Dutch East-Indies was founded by the East India Company some three centuries ago.

The rivermouth has never been navigable for large ships. Already in 1614, as appears from a letter of that year, banks were lying in the sea before the Tjiliwoeng, on which the water was sometimes only a foot deep.

All efforts to bring about an effective improvement (among others by the constructing of dikes vertically on the coast and dredging in the passage between) have failed. The large vessels always had to remain outside, where, behind the „Thousand Islands” on the roadstead of Batavia, they found a sufficiently safe anchorage.

As long as sailing predominated and the transshipment into proas could be done quietly and without too much hurry, because one day more or less at anchor made no difference, these conditions resulted in no great inconvenience.



Tandjong-Priok. Harbour Establishments in Out

When, however, after the opening of the Suez canal, an active steam navigation developed and speedy loading and unloading became of prime importance, the urgent need for improvement arose, wherein the abolishment of the slow transloading into proas and the establishment of direct connection between vessel and shore were felt to be the first requirements.

Various methods of solving the problem were considered. It was decided to remove the harbour to the eastern part of the Bay of Batavia, where at Tandjong Priok was found a more sandy part of the shore, with little aptitude for change.

The harbour at Tandjong Priok was constructed during the years 1877 to 1883 under management of the engineer J. A. de Gelder, chiefly according to plans by the well-known hydraulic architect J. A. A. Waldorp.

His project included an outer harbour and an inner basin, which is situated to the east of the axis of the outer harbour, wherein the plan was to construct eventually a necessary second inner harbour to the west side.

The front harbour, 140 H.A. in size had a width of 1172 M. at the base and a length of 1740 M., measured over the axis. Both the piers, stonepiles of simple construction, were 1765 M. and 1963 M. long, converging, so that at the outer ends a passage-opening into an entrance of 125 M. was formed.

The inner harbour had a depth of 7.5 M. at low tide (later deepened to 8.50 M.), a length of about 1100 M. and a bottom-width of 185 M., therefore affording a water-surface of more than 20 H.A.

The gully in the outer harbour was given a width of 250 M., a depth of 8 M. at low tide, after 1910 increased to 9.50 M.

On the place, where it was originally planned to construct the second harbour-basin, however, a railway yard with a station was built and a small basin dug (314 × 55 M.), originally intended as a coalingstation but afterwards equipped for the 4000 ton floating dry-dock, which with the surrounding workshops, etc. is now the property of the Tandjong Priok Dry-dock Company, by which it is exploited.

West of the dry-dock harbour and adapted for proas is the 9 K.M. long navigation canal, which connects Tandjong Priok with Batavia.

Along the western side of the first inner harbour were built a quay 1000 M. long and seven steel godowns, each 125 M. long and 35 M. broad.

The 8.80 M. wide space between the front of the quay and the front of the godowns is equipped for the use of electric cranes as well as for through railway-traffic.

At the eastern side of the first inner harbour were constructed landingstages on screw-piles, which serve for the unloading of salt, tin and coal.

It is planned to replace a considerable part of these landingstages by a quay, which will join the 124 M. long tract of quay completed in 1914, entirely in the south of this basin, along which a spacious iron shed was also built.

The growth of Tandjong Priok as import and export harbour of a rapidly developing and very important hinter-land (West Java) and its increasing importance as transshipment harbour for a large part of the Indian Archipelago, made the works which had been constructed too small by the end of the nineteenth century.

The solution as to how the gradually appearing obstacles should be overcome was arrived at in 1910, after the above mentioned visit of the committee Kraus-de Jongh, which also included this harbour in their report.

As a result of the plans, which were developed, it was decided to construct a new basin east of the first inner harbour, 1000 M. long, 120 M. broad and, like all the larger harbours in the Dutch East-Indies, adapted for ships with a maximum draught of 40 feet.

The quay construction along the western side followed directly after the dredging and several lessces were readily found for the adjacent tracts.

The digging of the second inner harbour necessitated a bend in the shore end of the east harbourdam, which formerly joined the shore in a straight line.

The west dam was also somewhat changed, being lengthened towards the shore, after which a considerable tract of land was reclaimed by filling in the area behind the elongation.

In 1915 it was decided to also make a quay along the eastern side of the harbour and to enlarge the bottom width of the basin from 120 to 150 M. The new wall serves over a great length as anchorage for ships which load or discharge coal.

In the year 1917 the second inner harbour was completed. Later elevators were constructed at the eastern edge for the mechanical handling of coal; on the western edge the national steamship enterprises are building their establishments, including among others four sheds, 40 M. broad, 120 M. long, consisting of a ground floor with a story.

A new, third inner harbour, east of the second harbour is now in course of construction.

With a length of over 1000 M. this harbour will be 215 M. wide and the quays will be equipped for ships of 12 M. draught.

The small peninsula between the second and third inner harbour (300 M. broad) is already entirely spoken for, while prospective lessees have also registered for tracts along the east side of the harbour. These grounds, intended for shipping purposes, commerce and industry, are being connected with the railways as well as with the waterway. The northern

half of this peninsula is intended for a coal-station with conveyors for loading and unloading.

The soil obtained from the dredging of the third inner harbour is utilized for raising the tracts east and south of the large harbour, which tracts are being made to serve for industries and housing. At the same time this raising offers the priceless advantage of coming a considerable step nearer the goal desired by the harbour management: a healthy Tandjong Priok.

East of the harbour area the Dutch steamship companies, headed by the Royal Packet Navigation Company, in co-operation with the Government are building numerous kampong houses and coolie lodgings (the living-quarters at Pedjongkoran), with sewer system, aqueduct, electric lights, spacious markets, cinemas, central kitchens, etc.

On the east side the living quarters are bounded by a fishingharbour, for the benefit of that part of the population which remained true to the old trade. On the other side of that harbour the space is left open for an extensive aviation field.

On the west side of the Pedjongkoran quarter runs the Kodja canal, accomodated for proa navigation, which connects the raised grounds south of the harbours with the inner harbours.

These tracts, which can be extended to any dimension, are intended for commerce and industry. They, too, will be connected by railway.

Various tracts are already taken up, among others, some have been rented to petroleum companies.

It goes without saying, that, with the enlarging of the water area, the increase in rented tracts, intended for many purposes, the railway connections were also improved and increased on a large scale. The most noticeable part of this are the large shunting premises and the new central station which is being constructed on the southwest side of the harbour area.

South of the station a European and Native living quarter is being planned, besides a road to Meester-Cornelis, which will also make a shorter connection of South Weltevreden with Priok and which will benefit traffic as well as the supply of labour.

Although the third inner harbour is still in an embryonic state, it has already appeared necessary to take further harbour-extension into account.

So far as the large water areas and quays are concerned, this will be done at the west side of the first inner harbour.

A few figures regarding the shipping in the harbour of Tandjong Priok may also be given here.

The total capacity in net register tons of the ships, which called at

Priok, increased from 549.000 in 1885 to 830.000 in 1895, 1.654.000 in 1905 and over 3.000.000 in 1915.

Although Tandjong Priok, like all other harbours, suffered from the consequences of the war, a considerable revival can now be seen.

The freight traffic did not fail to keep pace with the growth in tonnage. The value of goods imported and exported amounted to:

	in 1904	and in 1913
Import	f 29.840.000	f 76.489.000
Export	" 25.854.000	" 60.820.000
Total	f 55.694.000	f 137.309.000

The receipts of the service of the customs also show a considerable increase of the freight traffic. They amounted in 1905 to f 3.224.000, in 1910 to f 4.987.000, in 1913 to f 7.031.000 and in 1918 to f 8.450.000.

Finally it should be mentioned, that without depreciations and upkeep expenses, the construction of railroads and what has been done by private enterprise, the harbour of Tandjong Priok has required up to the present time an amount of round 41 million guilders.

B. The harbour of Sourabaya.

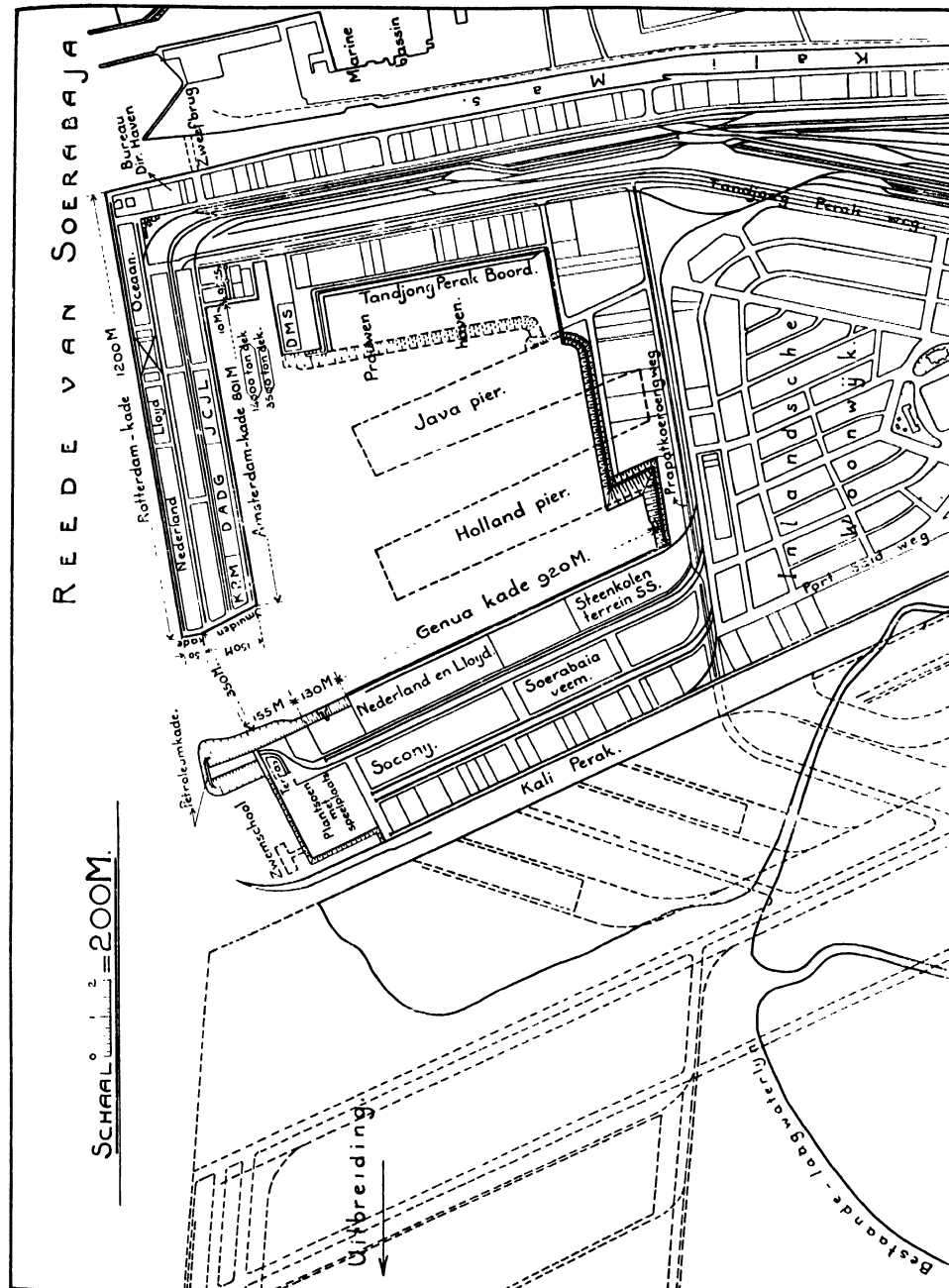
As Tandjong Priok is the import and export harbour of rapidly developing West-Java, so Sourabaya occupies this position for the certainly not less important Eastpart of Java, the most fertile part of the island.

It is not only due to this hinter-land, however, that Sourabaya has been able to develop into one of the most important harbours of the Archipelago; her very favourable natural location on a safe, only rarely stormy road-stead has also been an important factor.

This favourable location on a road-stead, where vessels could anchor unhindered and discharge or load their cargo with the help of lighters, which could reach the heart of the city going along the Kali Mas (one of the outlets of the Brantas River, on which Sourabaya is situated) has not been able to prevent, however, that here also the slow transshipment into proas had to be replaced by a direct connection between vessel and shore.

It was only ten years ago that a decision was made in favour of this direct connection. It is true, that already in 1875, after the Kali Mas had proved incapable of handling without stagnation the ever increasing traffic, resulting from the growing commerce, a plan was projected, whereby seagoing vessels were given an opportunity to load and discharge freight in direct connection with the shore, but this plan was not carried out. For a long time afterwards the solution was still sought in plans, wherein the lighter formed the link between vessel and warehouse.

In 1909 Prof. J. Kraus and G. J. de Jong were invited by the Government to give their advice regarding the harbour-improvement of Sourabaya.



Harbour Soerabaya

In 1910 their "Report on improvement of Harbour conditions of Sourabaya" appeared, in which they suggested among other things that a great part of the commercial traffic be transferred from the heavily overcrowded Kali Mas to a spacious, modernly equipped harbour tract, and in which was included a plan of a new harbour, located at some distance from the old business centre.

This plan has been partly carried out and for the rest has served as a guide for the works carried out since 1910.

These works consisted in the first place in the construction of a 200 M. wide pier (the so-called North Pier) west of the outlet of the Kali Mas and about perpendicular to the direction of this river. The pier was connected with the shore by a 400 M. wide dam alongside this outlet.

West of this dam and about parallel with it a pier was built out running from north to south. Between the north end of this pier and the west end of the North Pier there is a 350 M. wide channel opening.

The groundlevel of the beach located between the shore end of the dam and the new pier was raised with the soil obtained from the dredging of the 80 H.A. large basin, bounded by the new pier, dam, beach and North Pier and destined for industrial purposes and for building tracts.

From the North Pier, the outer quay (the Rotterdam Quay, situated along a 16 M. deep waterfront) is 1200 M. in length and the inner quay (the Amsterdam Quay, along which the basin was dredged to a depth of 9 M.) 800 M. in length. The head end of the pier is also closed off by a quay (the Ymuiden Quay).

Along both the outer and the inner quay a space of 10 M. is left free for railroad-traffic and cranes while a 40 M. wide tract is intended for the building of godowns. On the shoreside of both rows of godowns runs a 30 M. wide road.

The works described once being started, their great utility became fully apparent and the increasing demand of interested parties to obtain the use of the completed structures had the result that, even before the completion of the buildings which were in course of construction, the extension of the original plan had to be begun.

The seagoing vessel almost chased the dredger away; every-where extension of quay length was insisted on in spite of the excellent roadstead and the great number of proas, although cranes and other mechanical equipment could not at first be obtained on account of war conditions.

A glance at the map tells in what state the construction was in the beginning of 1920, to which may be added that the quays of the Holland Pier, begun not long ago, and of the Java Pier, to be constructed after this, are already requested for rent.

While for the quays first built, a waterfront of little over 9 M. depth under low tide was provided, the newer ones will have a water front of 10 and 12 M. depth.

Alongside the above mentioned West Pier, the so-called Genoa Quay with a length of 920 M., is being built at present.

The south part of this quay is reserved for coal storage.

For the need of petroleum ships, which are not admitted into the inner harbour, a landingstage is found at the north end of the West Dam, from where inflammable materials are stored on spacious tracts behind the Genoa Quay.

From the 400 M. wide dam along the Kali Mas, parallel with a 20 M. wide road along this river, is reserved a strip 50 M. wide for business tracts, besides a width of 50 M. for a road back of these tracts.

To the west of this was reserved 150 M. for a station and shunting premises, to be used for harbour-service.

The tracts, intended for commercial and other purposes, alongside the East Pier of the harbour basin, are separated from these shunting premises by a 50 M. wide road.

In the north-east corner of this basin were installed two floating dry-docks of 14000 tons and 5500 tons liftingpower, belonging respectively to the Government and to the Dry-dock Company, which latter exploits both these docks and the adjacent small dock harbour.

Wherever possible the Kali Mas has being gradually widened from 65 to 100 M., while at the same time along the entire shore, quays were in course of construction, whereby the opportunity for the mooring of proas was greatly benefited.

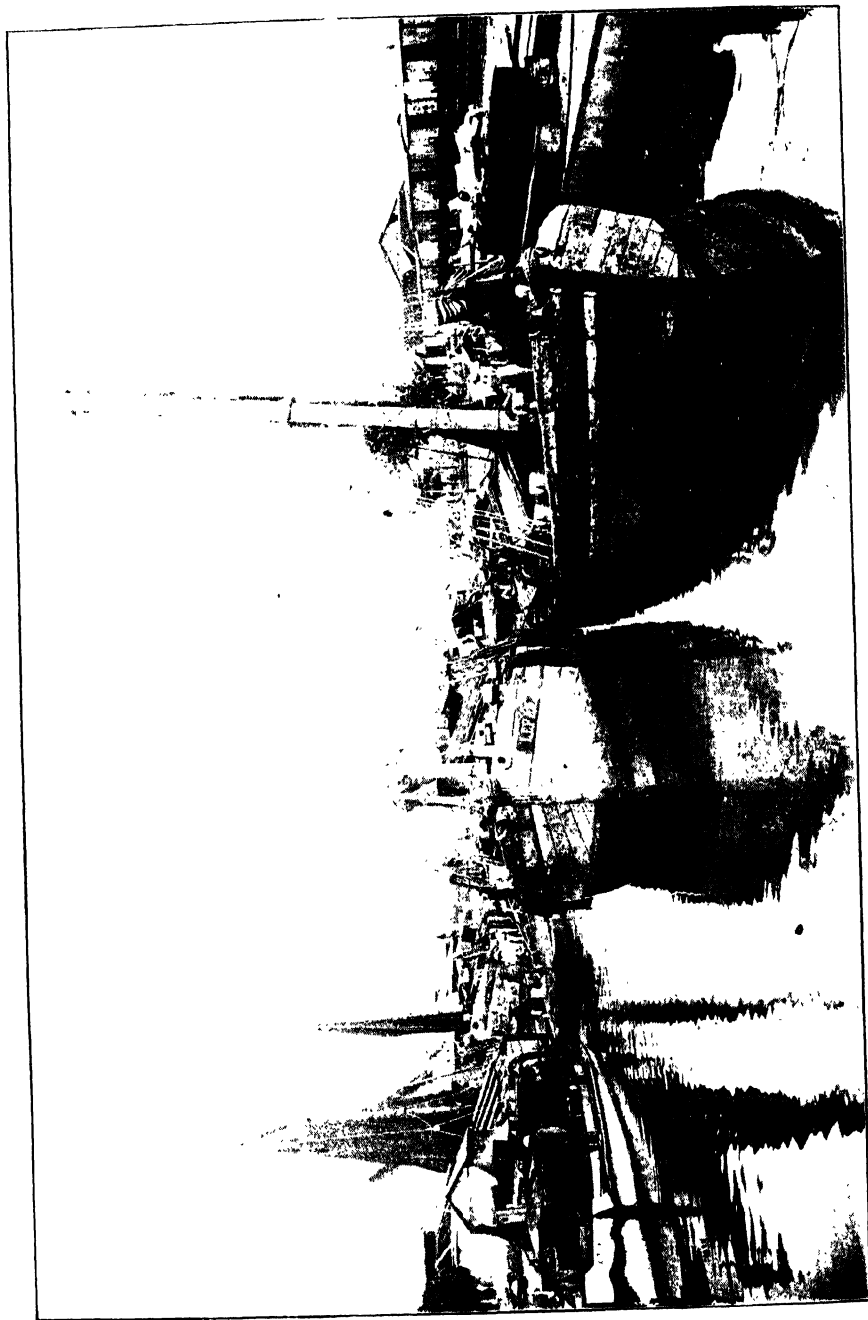
Where the buildings standing along the shores would make the widening of the river too expensive, the old constructions are being replaced by new ones, with deeper foundations, which allow safe dredging.

The construction of the quays and piers alongside and in the great harbour basin, which thus began to form a most important part of ocean navigation, made it necessary to look for similar tracts elsewhere which might be made ready for the use of those, who wished to occupy tracts situated at shallow waterfronts.

For this purpose attention fell upon the muddy alluvial grounds west of the new works, where there is opportunity for unlimited extension and for the satisfying of all needs and desires.

Some years ago, in accordance with this idea, the West Canal was completed, the borders of which readily found prospective occupants and which will be further lengthened under the name of Kali Perak to near the Grisse Road, or in other words will be brought closer to the grounds intended for housing.

The Kali Perak may therefore be considered as a second Kali Mas, in this way, that the western bank is to be divided by branch canals,



Somerset View Harbour and

according to need, and that here also as on the other harbour tracts it will be possible to establish railway connections. It will also be possible, if desired, to widen and deepen the most northern part of the Kali Perak, so that the requisite space can be offered to factories or establishments, which need spacious and not too expensive grounds, within reach of medium sized, seagoing vessels.

It is expected that in about ten years the plan projected by Messrs. Kraus and De Jongh will be completed, though with revisions and extensions, and preparations as to further extensions, should such then appear necessary, have been made. This is shown by the map on which, among other things, is drawn a second North Pier with basin.

The total contents in net Register Tons of the ships, which called at Sourabaya, rose from 1,690,000 in 1907 to 2,617,000 in 1914.

The value of the *freight traffic* amounted to:

Year	Import	Export	Total
1910	—.—	—.—	f 135,000,000
1911	f 102,000,000	f 98,000,000	„ 200,000,000
1913	„ 115,000,000	„ 91,000,000	„ 209,000,000
1914	„ 200,000,000	„ 101,000,000	„ 201,000,000
1915	„ 90,000,000	„ 132,000,000	„ 222,000,000
1916	„ 118,000,000	„ 162,000,000	„ 280,000,000
1917	„ 120,000,000	„ 100,000,000	„ 220,000,000
1918	„ 167,000,000	„ 125,000,000	„ 292,000,000

The customs receipts kept pace with this and amounted to

1905	f 4,450,000
1910	„ 6,805,000
1915	„ 9,700,000
1918	„ 9,855,000

Up to the present time the harbour has required an expenditure of more than 50 million guilders, not including the expense of railroad construction and what has been built by private parties.

C. The harbour of Semarang.

The original development of the harbour of Semarang came about in the same way as that of Batavia. Here also a rivermouth was first used, that of the Semarang River, which could be navigated by lighters, taking their cargo from the larger vessels on the roadstead (the Java Sea), up to the storehouses in the city.

This passage, also, did not maintain its full importance until the present time. In about the year 1870 the condition of the river from silting became such that proa navigation became almost impossible.

For improvement a new connection was dug in 1872 between the sea, the so-called New Harbour Canal. This canal, however, also met with the difficulty of mud formation. Various efforts to bring about effective improvement failed to give the desired result.

Finally in 1900 it was decided to build a new proa harbour, which is now completed in spite of the many difficulties encountered.

The new harbour construction, with an area of 13 H.A., is situated east of the harbour canal, of which the west pier has been lengthened to 1600 M., to prevent silting of the mouth and to maintain a greater depth.

The proa harbour has a spacious frontage, branching out towards the land in two custom basins, respectively 55 and 65 M. wide, and in a small harbour for fishingvessels. On the seaside this frontage is connected with the harbour canal by a 75 M. wide entrance.

The fishing harbour has a surface area of $40 \times 100 \text{ M}^2$ and has quays on the south and east sides. These quays join those of the customhouse basins, which have a total length of 1393 M.

The pier, which is built with 24 M. wide sheds between the two basins, is 125 M. wide. The north and south sides of the pier are respectively 314 M. and 174 M. long. Apart from the old customhouse („boom”) space and private storehouses, the harbour management has the disposal of thirteen sheds with a total area of $\pm 35000 \text{ M}^2$.

To the equipment of the harbour belong a small dry-dock besides a 10 ton and a 25 ton stationery steam crane. Most of the sheds are so located, that they can be connected with both the railway lines going out from Semarang.

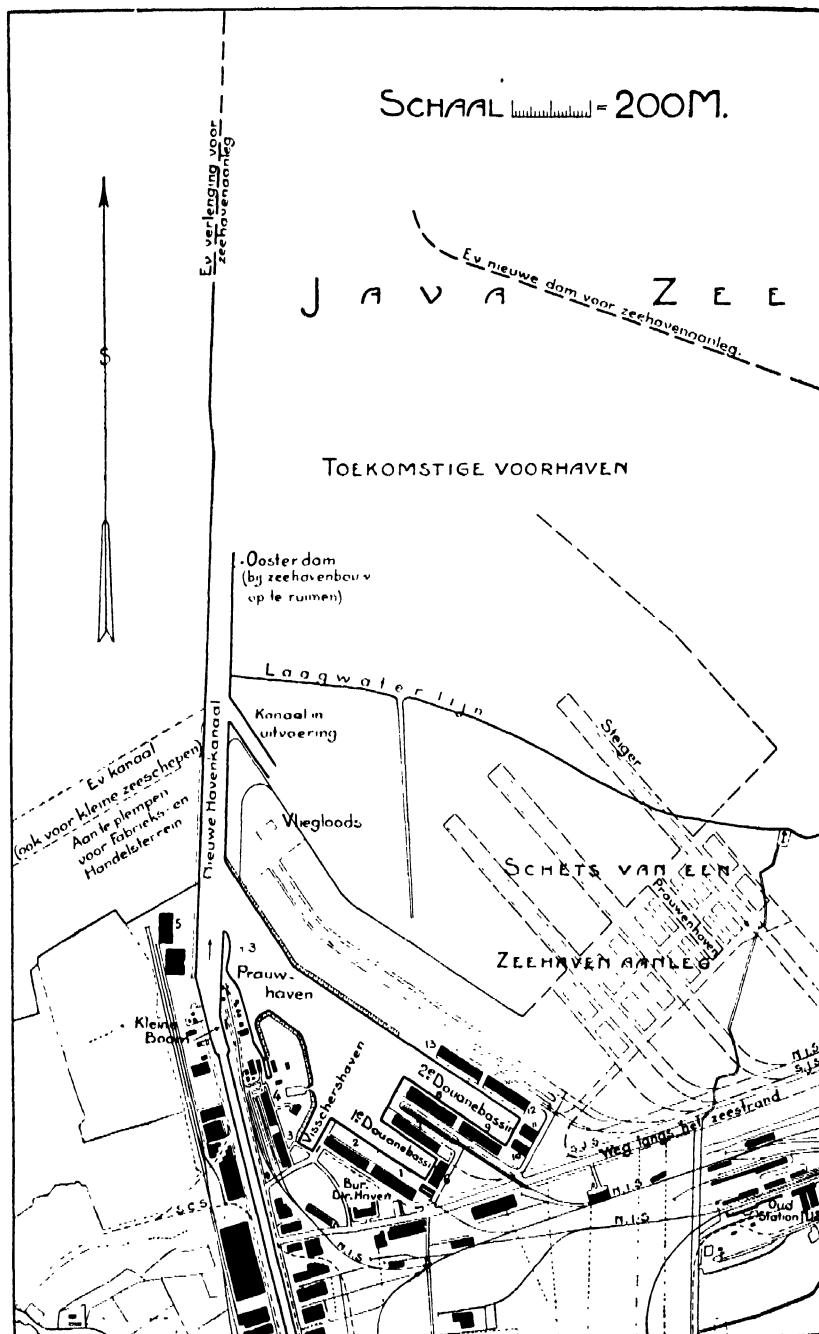
Although the new proa harbour brought about considerable improvement, this will not be sufficient in the long run. Semarang, also, wants a sea harbour and in the first place a protected road-stead, where transshipment between ship and proa can take place undisturbed.

During the west monsoon the Java Sea is often so stormy, that traffic with the shore must sometimes be stopped entirely and the discharging of freight can only take place alee of the ship.

Delay in transport, accidents to proas, damage and loss of goods are an inevitable consequence of this condition.

Before risking a harbour venture, however, the Government has made thorough investigation into those technical and economical problems, which must not be overlooked when building seaports.

The result of this investigation justifies the construction of a seaport, providing it is confined to a somewhat moderate solution and that, among other things, the harbour dams be limited to a depth of 5 M.



Harbour Semarang

Harbour dams, built out into the sea to a considerably greater water-depth, would require expenditures beyond all limits. Moreover, the present state of dredging-technic makes these longer dikes superfluous, as proven by experimental tests.

Furthermore, it will not be possible to build the usual quays, on account of the very poor subsoil and the necessity of hauling the sand required for improvement of the subsoil from too faraway.

The solution will be sought by putting into practice the pier system, which predominates in American harbours. Concrete piers built out from the shore (if desired to a length of 400 M. and 40 M. or more in width), on which sheds of one or two stories are built, having railway connections, give excellent opportunity for the mooring of the largest seagoing vessels as well as for loading, unloading and storage.

The east side of the existing harbour canal is the most suitable place for the new seaport, if only for the freight traffic of the railways, about 80% of which run in an easterly direction, and on account of the close relation which can be established between the new seaport and the already existing harbour. The direction of the piers is so chosen, that the moored ships lie with the bow to the storm direction. Towards the east side, where it is planned to reserve a spacious tract for the housing of harbour labourers, sufficient extension can be acquired for the next ten years, while west of the harbour canal, cheap, spacious tracts, with railway connections, and situated either along deep or shallow water-fronts are available for industrial purposes.

The shipping of Semarang during the second decade of this century appears from the following table:

Year	Number of steamers arrived	Net capacity in M ³
1909	932	5.397.000.—
1910	987	5.888.000.—
1911	1052	6.383.000.—
1912	1111	6.755.000.—
1913	1176	7.320.000.—
1914	1163	7.788.000.—
1915	1060	6.898.000.—
1916	1005	6.404.000.—
1917	905	5.095.000.—
1918	875	4.684.000.—

The total amount of goods imported and exported amounted to:

457,200 tons	in 1906
607,000 „	„ 1910
620,400 „	„ 1911
704,400 „	„ 1912
909,000 „	„ 1913
937,000 „	„ 1918

The importance of the hinterland of Semarang appears from the table aside, wherein, next to the value of the import and export of entire Java and Madura, is given that of the import and export of Semarang.

SCHAL 1 : 200 M



naar Maas

Station Tjilajap.

Kali Joso

Spoorbaan Zeestrand

Socany

Gedooj-Binnenhaven.

Pet Steger.

DPM

Station

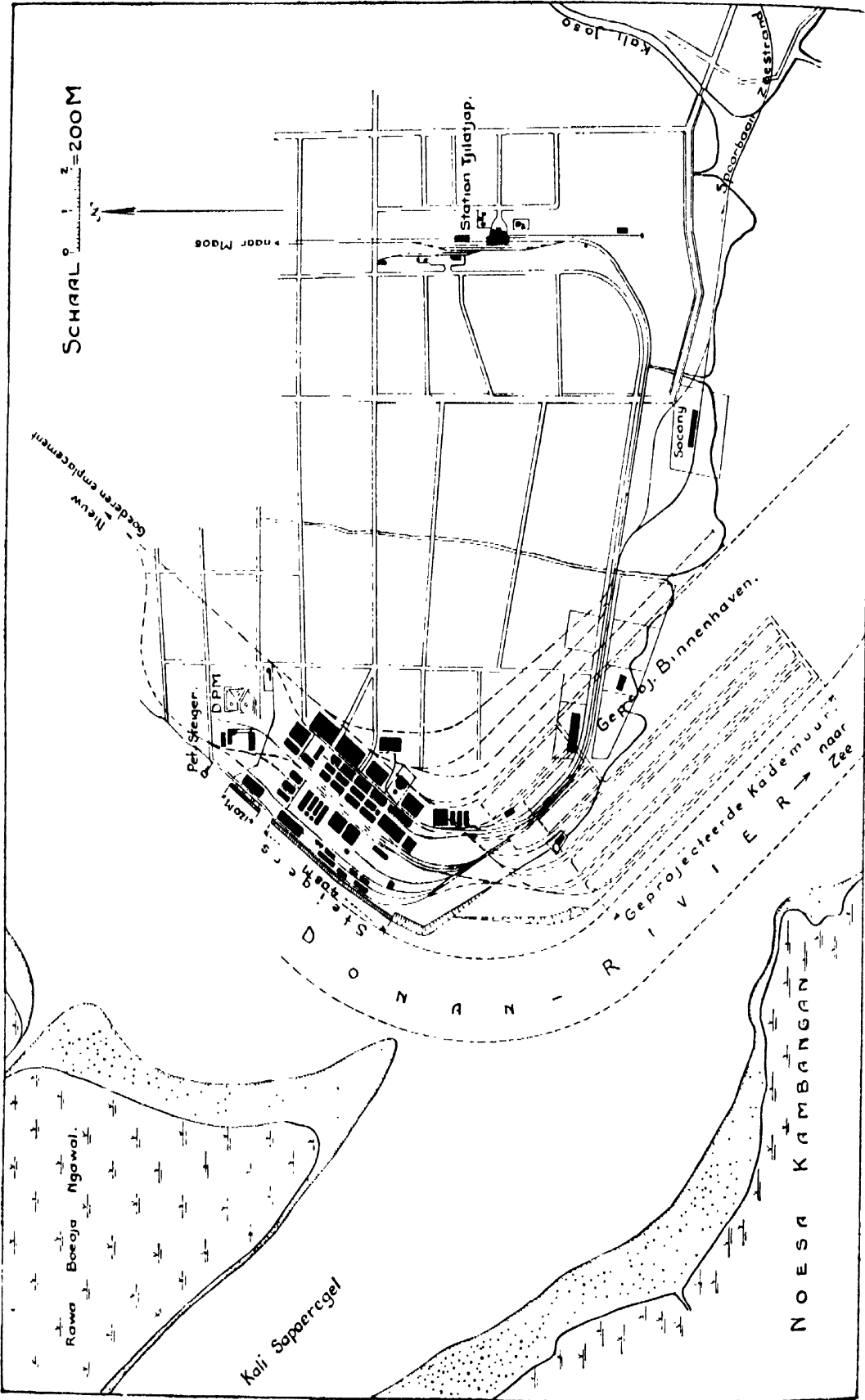
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NOESA KAMBANGAN

Kali Sapaercgel

Rawa Boeja Ngawal.



Year	Import		Export		Total import and export Semarang
	Java and Madura	Semarang	Java and Madura	Semarang	
1900	f 121.000.000	f 51.000.000	f 157.000.000	f 29.000.000	f 60.000.000
1905	" 152.000.000	" 54.000.000	" 184.000.000	" 32.000.000	" 66.000.000
1910	" 219.000.000	" 50.000.000	" 259.000.000	" 45.000.000	" 95.000.000
1915	" 300.000.000	" 75.000.000	" 317.000.000	" 56.000.000	" 129.000.000
1916	" 289.000.000	" 59.000.000	" 511.000.000	" 87.000.000	" 146.000.000
1918	" 365.000.000	" 78.000.000	" 355.000.000	" 57.000.000	" 155.000.000

The import and export duties and excise receipts amounted to:

f 2.404.000	in 1905
„ 4.343.000	„ 1910
„ 6.022.000	„ 1913
„ 4.860.000	„ 1918

D. The harbour of Tjilatjap.

This harbour is the most favoured by nature of all the harbours in Java. Tjilatjap is situated on a peninsula, bounded on the east side by the Indian Ocean and on the west side by the River Donan. The mouth of this river, to which a passage gives entrance of such natural depth that ships of 7 M. draught can enter at all times and those of 8 M. draught at ordinary high tide, affords an absolutely safe anchorage, protected by the heave of the Indian Ocean by the island Noesoe Kembangan which lies opposite.

Tjilatjap's hinterland is also not without importance. In spite of all these favourable circumstances the harbour, because of its more isolated location on the south coast of Java, outside the ordinary shipping routes, has not been able to develop to the extent of the above described harbours, situated on the north coast.

The harbour establishment of Tjilatjap in its first construction, dating from the years 1886-1888, lies 8 K.M. from the sea and in 1887 was connected with the railway system of Java by the line Tjilatjap-Maos.

With a wharf on screw-piles about 10 M. wide, soon lengthened to 408 M., this first construction afforded a mooring place for vessels with a draught of 6.50 M.

Behind the wharf were erected storehouses, freight depots, custom-houses, coalsheds, etc., all connected with the railroad. Besides these, a salt wharf and a petroleum wharf were constructed.

About 1910 shipping had increased to such an extent as a result of the development of the sugar industry and the flourishing condition of the hinterland, that an extension of the wharflength had to be undertaken.

It was decided to build a wharf 127 M. long north of the one already existing and running ahead of it into the sea, so as to give ships of 8 M. draught an opportunity to moor. The extension also included the building of two sheds with a surface area of 4500 M², and improvement of the railway construction.

After some disappointment, which caused delay in the completion, the projected works were finished in 1918.

These works, also, are no longer sufficient for the steadily increasing traffic of the harbour of Tjilatjap.

New plans are already proposed, the carrying out of which will be begun in 1920. These will bring about improvement in the connection of the harbour structures with the railroad system by building, among other things,

new shunting-premises, which will join an 800 M. long quay, to be built downstream from the present harbour area. If in the future more mooring space should become necessary, this can be provided by the building of an inner harbour.

Behind the quay, for which several tenants have already appeared, besides the coalyard of the State Railways, also the necessary sheds and storehouses will be erected.

The old establishment will remain of particular importance to the development of coast navigation.

Closely connected with these improvements is the dredging of the passage and of the shallows in front of the mouth of the Donan River, which work has already been started.

The number of ships which called in the years 1905 to 1914 increased by 35%, the net capacity by about 60%. In 1913 the harbour was visited by 170 ships with a total capacity of 469,000 Register Tons.

With this increase the freight traffic kept pace, rising from round 224,000 tons (of 1000 K.G.) in 1910 to 323,000 tons in 1914, an increase, therefore, of almost 45%.

F. The harbour of Macassar.

About a quarter of a century ago only a 490 M. stretch of the beach, along which the town of Macassar extends, was provided with a quay. Most of the warehouses and offices of the European and Chinese traders were found here. Six wharves from 50 to 60 M. in length were built out into the sea for the mooring of seagoing vessels, while proas could moor at four smaller wharves.

The vessels, which did not use the piers, anchored on the roadstead and loaded and unloaded by means of tongkangs, proas or sampangs, which, except for a few days in the West Monsoon, could at all times be easily set on the beach north and south of the quay.

When traffic assumed considerable proportions, the number of steamers calling at Macassar more than doubled from 1896 to 1900, it became urgently necessary to provide landing facilities.

This was done by the construction of a wharf on screw-piles, 500 M. long and 10 M. wide, connected with the shore by footbridges, which wharf was completed in 1908, in spite of the many difficulties encountered.

At the same time a few sheds were built.

The ever increasing transit traffic of Macassar, which by its geographical location forms the staple harbour of the eastern Molucca Archipelago, made it apparent already in 1910, that a new extension would be necessary. This has been carried out according to the plans of Messrs. Kraus and De Jongh, who were also consulted by the Government regarding Macassar, in the form of a caisson quay, built out into the sea north of the screw-pile wharf.

When the quay construction had once been started, it soon became apparent that it had to be extended considerably farther than was originally supposed. In the years 1912 to 1918 a quay 1340 M. long was completed, offering a depth of from 9 to 10 M. to vessels at low tide. Behind this quay, which, like the screwpile wharf, was built out into the sea at some distance from the shore—for which important soil improvements had to be carried out—a tract 170 M. wide was acquired, while east of the southern end a proa harbour was constructed, 280 M. long with a waterdepth of 3 M.

North of the quay a tract was banked in, intended for the storage of coal and petroleum.

While the screwpile wharf was sufficiently guarded by the coral islands, which protect the roadstead of Macassar, this is not the case with the new quay. In 1919 work was begun on the construction of a breakwater over the coral banks, which will also assure vessels in the west monsoon the desired quiet mooring at the quay.

At Macassar it also happens, as is usually the case in a flourishing and growing harbour, that the demand for mooring space and storage tracts exceeds the supply.

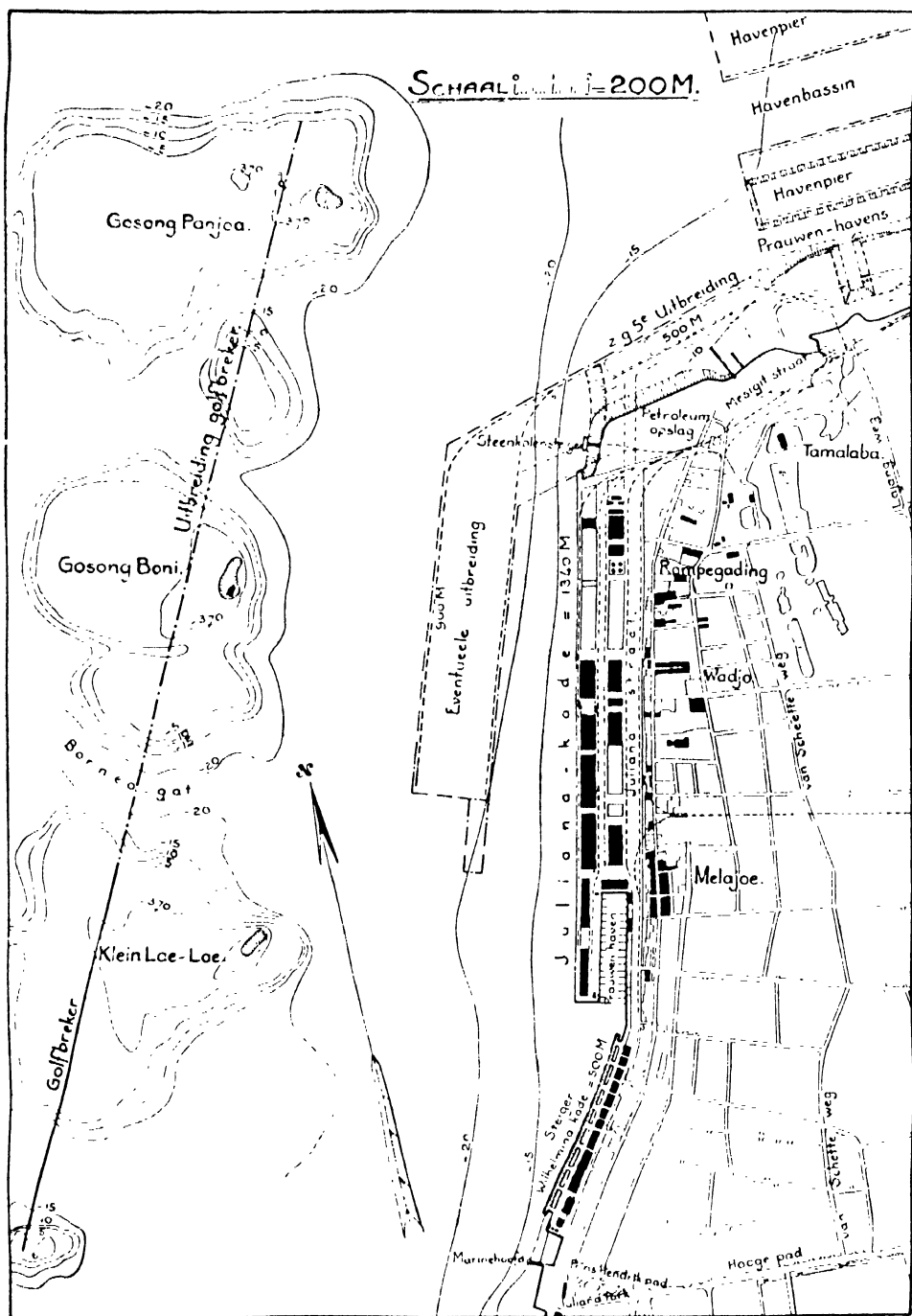
Further extension of the works just completed must therefore be considered here also. This extension is planned east and west of the works last-completed and the building of an eastern quay, 500 M. long, will be begun as well as the preparation of tracts for commercial and industrial purposes.

With regard to wind and current this quay of the so-called fifth extension is very well located and can dispense with a breakwater. If in the future still further extension should prove necessary, this can be obtained by building out a pier west of the existing quay and by constructing harbour piers and basins intended for mooring seagoing vessels north of the new proa harbour.

In connection with the plans considered regarding the building of tramways in Celebes, direct railway connection is counted on in all projects.

The value of the freight traffic in Macassar in the years 1911 up to and including 1918 is seen from the following table:

Year	Import	Export	Total
1911	f 8.229.000	f 18.341.000	f 26.570.000
1912	„ 11.116.000	„ 15.697.000	„ 26.813.000
1913	„ 18.905.000	„ 15.712.000	„ 34.617.000
1914	„ 10.615.000	„ 17.003.000	„ 27.618.000
1915	„ 10.355.000	„ 15.415.000	„ 25.770.000
1916	„ 9.039.000	„ 12.653.000	„ 21.692.000
1917	„ 16.827.000	„ 13.420.000	„ 30.247.000



Harbour Macassar

The receipts in import and export duties and excises amounted to:

in 1910	f 852.000
.. 1913	1.425.000
.. 1918	1.252.000
.. 1919	1.877.000

In conclusion it may be remarked, that the harbour improvements of Macassar required up to the present time a capital expenditure of round 15 million guilders, not counting the cost of works completed by private enterprise, etc.

F. Emmahaven (Padang).

Emmahaven, situated in the northern part of the Queen's Bay, is the principle harbour of the entire westerly coast of Sumatra.

The main purpose for its construction during the eighties was to create an opportunity for the shipping of Ombilin coal.

Troesang Bay, situated further south, also offered a good location for this purpose. The nearness of the flourishing business town of Padang, however, gave Queen's Bay the preference over Troesang Bay, which is more favourably situated from a technical point of view.

Construction was begun at once on a large scale.

By the building of two breakwaters a harbour was formed between these and the coast with a surface area of ± 1 K.M².

One of the breakwaters, the smallest, having a length of 260 M., is built across a coral bank, which runs dry at low tide, about parallel with the coast, while the other was constructed in a south-easterly direction and extends into the sea over a length of more than 900 M.,

The depth of the harbour and the entrance was brought to 79 dM. under ordinary low tide, so that in general ships with a draught of 27 feet met with no delay when entering, while steamers with a draught of 30 feet had an opportunity to enter twice a day. Three wharves on screw-piles, 84.60 M. in length, to which, therefore, three ships of about 125 M. could moor, a smaller wharf of 50 M. and two small wharves for government vessels and sailing vessels were built. There was also a separate location for the coal-shute, a mechanical apparatus, intended exclusively for the transport of Ombilin coal.

The three above mentioned wharves were each 10 M. wide and build out, at a mutual distance of 60 M., alongside the shore.

Behind these screw-pile wharves and separated from them by a 10 M. wide tract of ground, were erected five storage sheds and entrepôts, besides a small entrepot for inflammable goods. At some distance behind these sheds is located the railway station, also used as postal- and telegraph office, from where a railroad runs direct to Padang, which is 7 K.M.

farther on. Parallel with the shore end of the 900 M. long breakwater and separated from this by an 80 M. wide tract, on which, among other structures, are a storage shed and the government salt warehouse, was built a trade wharf 50 M. in length.

The short little mooring wharves for sailing vessels and a small dynamite wharf, all three built out from the long breakwater, were also constructed.

After this, few new works have been built. The big scale of construction made this unnecessary. The sheds and entrepôts were lengthened, however, as well as the screwpile wharf (to a total of 430 M.), a new Government entrepot built and the harbour basin dredged out to a depth of 8.50 M. at low tide.

The facilities for loading and discharging coal were also improved. At present the equipment consists of:

- a. a coal chute with a capacity of 300 tons per hour (for bunker coal)
- b. two electric coal conveyers, each with a capacity of 120 tons per hour and
- c. a floating coal conveyer with a capacity of practically 40 tons per hour.

Apart from the coal industry Emmahaven is of importance as an import and export harbour, so far almost alone for the region directly back of the West Coast of Sumatra, renowned for its beautiful scenery.

The small native craft navigating between the islands and the coast places to the north and south, call at Padang, where the commercial houses are established.

Within a short time extension works at Emmahaven will be considered, which will include among other things the changing of the station-premises, the building of more sheds and warehouses, the raising of the karang banks, besides the deepening of the harbour basin to 9.50 at low tide. This last work has already been begun.

The value of the goods imported and exported during the years 1911 up to and including 1918 appears from the following table:

Value in thousands of guilders:			
Year	Import	Export	Total
1911	9.607	6.749	16.356
1912	7.886	8.805	16.691
1913	16.355	7.190	23.445
1914	9.166	8.356	17.522
1915	10.168	10.124	20.092
1916	9.466	7.995	17.461
1917	9.880	5.910	15.790
1918	9.853	1.783	11.636

Below are some data regarding the shipping traffic.

Year	Number			M ³ net capacity		
	Steamers	Sailing vessels	Total	Steamers	Sailing vessels	Total
1910	570	1080	1650	2.401.000	22.000	2.425.000
1913	880	1200	1080	3.025.000	27.000	3.082.000
1914	850	1280	2130	3.058.000	59.000	3.097.000
1915	850	1170	2020	2.977.000	58.000	3.015.000
1916	880	960	1840	2.681.000	51.000	2.712.000
1917	640	980	1620	1.618.000	41.000	1.659.000
1918	550	1190	1740	1.618.000	46.000	1.664.000

G. The harbour of Belawan (Deli).

In the whole island of Sumatra there is no province which has developed since 1883 on such a scale as the „Government East Coast of Sumatra“, with the capital Medan.

This development, resulting from an enormous extension of the agricultural estates, could not fail to have great influence on the harbour towns of the province and especially on Belawan Deli, situated on the west side of the small island of that name, which is bounded on this side and on the north by the deep Belawan River and on the east by the shallow and much sand carrying Deli River.

Here, in 1890, on the initiative of the Deli Company a harbour establishment was constructed, which put an end to the method of loading and unloading, which had been in practice up to that time (lighter transport between the shore and the vessel anchored on the Belawan River).

The harbour works, constructed by the Deli Railroad Company, which at the same time had established the railway connection between Belawan and Medan and the districts Serdang and Langkat, were of a simple nature. The same was true of the Government wharf, the custom house and the private storage sheds.

Sooner than anyone supposed, however, the time came, when the narrow wharves and the small sheds formed gradually increasing obstacle to the rapid handling of freight.

Already in 1895 the first great harbour extension took place and the waterfront was enlarged by 350 M.

The extension of private sheds kept pace with this; a considerable extension of the Government custom houses was completed in 1905.

In 1907 the Deli Railroad Company decided to make an important extension of its harbourworks, to which among others belonged the construction of a basin intended for proas, which brought atap (roof thatching) from Asahan and elsewhere (atap harbour).

About 1905 the wish was made known to transfer the shipping of the products of Acheen and Deli from the Straits harbours to a port in Sumatra itself by the establishment of a coast navigation, with rather large vessels, along the North East Coast of Sumatra, which again drew attention to Belawan.

Although the first attempts to deepen out a channel in the bank before the Belawan and Deli Rivers failed, they were crowned with success, when in 1912 a mud sucker of great capacity was procured for this purpose.

The results obtained herewith were of so favourable a nature, that prospects opened up of making the Belawan accessible to large seagoing vessels or, as it was said, of making Belawan an ocean harbour.

In the meantime it was necessary to extend the establishment by building more sheds and mooring places.

At the end of 1916 there were available: 667 M. of wharfage, of which 460 M. belonged to the Government and 207 M. to private parties, 10084 M² of storage space, of which 5892 M² was Government property and 4192 M² private property.

The storage space is still insufficient, however. The existing area being now fully built up, further extension can only take place on the new coast navy yard, located west of the ship-building yard. A shed of 3300 M³ with a warehouse (entrepot) back of it are already being built. Besides, the building of a storage for steel and iron with landingstages in front thereof has also been started.

Still further extension must be considered, however. Various factors indicate, that it is not too bold a guess, that within the next few years a total import of 500.000 @ 350.000 tons and an export of over 100.000 tons may be counted on, thus a total freight traffic of round 450.000 tons must be handled at Belawan.

When it is taken into consideration, that already in 1917 the harbourworks were no longer sufficient for the export and import traffic (300.000 tons), then it is plain, that, if commerce and shipping are to be allowed to develop unhindered, important extensions in the near future are decidedly necessary.

To carry out these works there are two ways open:

- 1st. An attempt can be made to transfer a part of the traffic to the smaller harbours of the province, by improving or extending the existing works according to requirements.
- 2nd. An attempt can be made to draw the traffic as much as possible to Belawan, by taking care, that the harbour facilities there shall fully meet the requirements, which may reasonably be demanded from these works in view of the freight traffic to be expected in this case, wherein it goes

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without saying oceangoing steamers must be enabled to be moored directly to the landingstage.

If both solutions are compared, one is soon inclined to give preference to the last named alternative. Not only has experience taught the superiority of the latter method over the former, but by putting it into practice the transloading from coast- to ocean steamer is avoided, which is of main importance for Belawan, in which harbour three quarters of the total import of European goods and rice takes place via the English transit harbours Penang and Singapore. Further development is therefore being done in this direction.

In 1918 a 485 M. long caisson quay was contracted for along the Belawan River, located on the same shore as the establishment for coast-navigation but farther downstream.

By the installation of a second mud sucker of still greater power and capacity than the first one, in 1919 an even depth of 73 dM. at ordinary high tide and 65 dM. at low tide were obtained. Ships of 20' draught can therefore enter at all times and those of 23' at high tide. The dredging work is being carried on continuously.

The river in front of the caisson quay will be dredged out to such a depth that ships with a draught of 9.50 M. can remain moored at the lowest tide.

Behind the quay the usual railway connections, cranes, sheds, living quarters, industrial tracts, etc. will be put in order.

As it is already apparent, that the 485 M. of quay length is only sufficient for a third of the applications made, the wall must at once be lengthened in an easterly direction. Later an inner basin may be constructed, which may either be provided with quays of the ordinary type or with piers, as is the custom in America.

The following table gives the number and the capacity of the ships, which called at Belawan during the last ten successive years:

Year	Steamers	
	Number	Net capacity in M ³
1919	790	789.000
1910	1100	816.000
1911	1180	876.000
1912	1500	947.000
1913	1360	1.023.000
1914	1220	1.088.000
1915	1280	1.647.000
1916	1350	1.534.000
1917	1270	1.285.000
1918	1100	1.141.000

The railroad freight traffic to and from Belawan was as follows (in tons of 1000 K.G.):

In the Year	Export	Import
1900	21.000	164.000
1905	21.000	148.000
1910	25.000	180.000
1913	38.000	278.000
1914	44.000	259.000
1915	49.000	238.000
1916	46.000	269.000
1917	34.000	283.000
1918	22.000	271.000

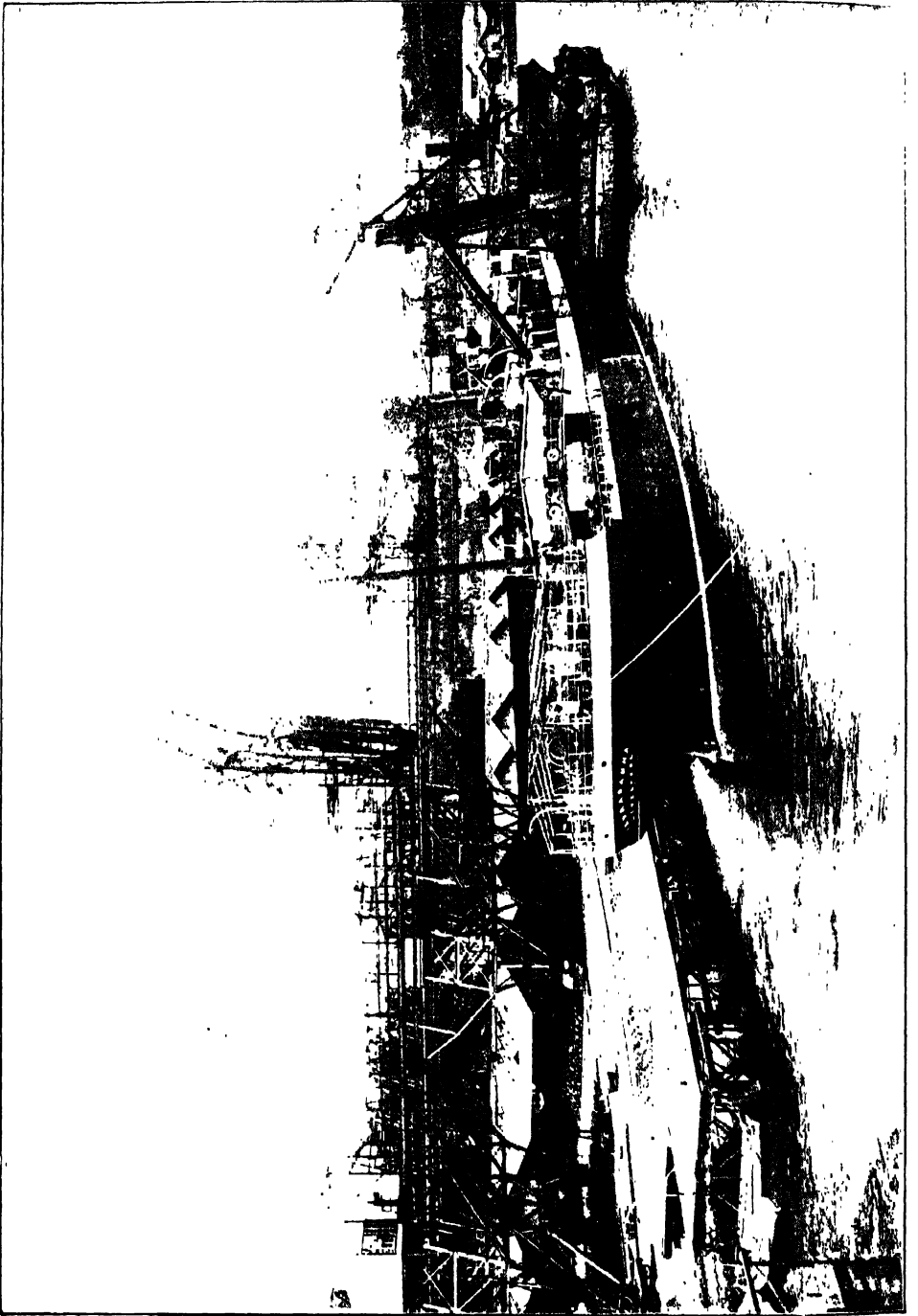
Against a decrease in the export in 1918 stands a considerable increase in 1919, owing to the fact that the exports of rubber, tea, coffee and tobacco continually increased.

Expressed in terms of money value, the freight traffic at Belawan was as follows (in thousands of guilders):

Year	Import	Export	Total
1911	15.714	20.396	36.110
1912	18.426	55.245	73.671
1913	32.409	75.778	108.187
1914	25.193	16.267	41.460
1915	24.001	30.912	54.913
1916	34.084	73.442	107.526
1917	31.106	48.778	79.884

The customs service received in:

1905	1.079.000	guilders
1910	1.815.000	„
1913	2.501.000	„
1918	3.568.000	„



III. The harbour of Sabang.

On account of the purpose for which it was built, this harbour in some measure falls outside the range of the seven large harbours already described.

The harbour is situated on the island of Poeloe Weh, about 50 K.M. north of Kota Radja, the capital of Acheen and was built in 1887 by the firm De Lange of Batavia, supported by the Netherlands Trading Co (Nederlandsche Handelmaatschappij), after the latter had obtained a concession to establish a coalingstation on the bay of the above-mentioned name.

The exceptionally favourable situation of Sabang with regard to world trade, close to the entrance of the Strait of Malacca, was a favourable factor for the purpose which the owners had in view, namely the establishing of a coalingstation and a place for transshipment.

That part of Sabang Bay, where the harbourworks are built, is sheltered against heavy breakers and dangerous winds by mountains and higher stretches of coast. Dams and breakwaters were therefore unnecessary.

The entrance to the bay at its narrowest point is 750 M. wide; a watersurface area of 1500 by 900 M. offers an excellent, not too deep anchorage and can accomodate at least 25 small or 12 large vessels, of which 6 can be moored to piers and 6 other ones to buoys. Between the island of Klah and the shore there is also available anchorage for smaller vessels.

In 1896 two wharves were built on screw-piles for coal loading ships, with the thought in mind, that they must be of a permanent character so as to allow opportunity for further expansion. In 1898 a floating dock with a lifting power of practically 2600 tons was brought here from Sourabaja as a gift from the Government, which in return obtained the right of free dockage for her vessels.

In the same year the Sabang Bay Harbour & Coaling Station Ltd. (Naamlooze Vennootschap Zeehaven & Kolenstation Sabangbaai) was established, which under the supervision of the Netherlands Trading Company (Nederlandsche Handelmaatschappij) took over the exploitation of the harbour from the firm De Lange.

The real growth of Sabang dates from 1903, the year in which were completed the extension of the harbourworks, including the equipment, workshops and buildings necessary to cope with the steadily increasing traffic.

The screw-pile wharf for coaling was lengthened to 550 M. Back of this were built 16 double coalsheds, 24 M. wide and 46 M. deep, besides 5 warehouses. Five electrical, movable portal-cranes considerably increased the working capacity of the establishment. The cranes can be

moved along the quay and on the shore side extend for a length of 100 M. over the coalsheds while on the harbour side they reach beyond pier and ship. With these cranes it is possible to unload a vessel of 7000 tons within 3 days.

Besides the coal conveyers the Sabang Company has also owned since 1912 a 900 ton bunker lighter, with a loading capacity of 300 tons per hour.

Behind the drydock, besides various buildings such as workshop, storehouses, ice-factory and electric power house, there are also workshops for the repairing of vessels and machines; which shops are profitable to the exploitation of the dock.

In addition there are slip-ways for the building of small steamers, motorboats and lighters, up to 1000 tons.

Aside from the coaling industry the Sabang Company has built a special small wharf for the ferry service to Oelee-Lheue, besides 200 M. long trading wharves for transshipment and spacious warehouses. While most of these latter are built on the shore, one is placed on the wharf itself. Alongside the hills near the harbour establishment the company has erected various buildings, shops, offices, a hotel, etc.

The new petroleum establishment has been built entirely separated.

Between this establishment and the existing works the necessary space for extension of mooring-facilities is available. This part, however, not being so well sheltered against the weather, the new construction will be of the pier type for vessels with a draught of 12 M. or less.

Up to the present all these works have been carried out by the Sabang Company, in this way that since 1911 the Netherlands East Indian Government has taken over most of them and given them out in long-lease to the Sabang Company.

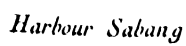
The agreement is of this nature, that the above-named company obtains money for new construction and upkeep at the easiest terms and that the Government (which is interested to the extent of more than 2.4 million guilders) gets a certain share of the profits received.

As already remarked, the main business of Sabang is the coaling-industry and the transshipment of cargo.

In 1912 and 1913 the amount of coal imported and exported amounted successively to 420.000 and 450.000 tons of 1000 K.G., which business in 1915 (due to the influence of the war) decreased to 268.000 tons.

In 1913 there were also handled 30.000 tons of petroleum and 150.000 tons of other goods.

Among these were tobacco, from the East Coast of Sumatra, which was carried from Belawan by coast-vessels and transshipped into ocean-steamers i.a. those of the Netherlands Steamship Co. From 1905 to 1910 about 110.000 bales of tobacco were shipped yearly from Sabang to Europe.



It must be taken into consideration, that the consumption and production of the island Poeloe Weh, on which the harbour is situated, is almost nihil, and that therefore the same goods arrive and depart, so that all goods are estimated twice. Thus in 1912 only 210.000 tons of coal were delivered.

The shipping traffic is shown from the following table.

Vessels arrived during the years.

Year	Merchant vessels	
	Number	Net capacity in M ³
1902	192	—.—
1905	643	—.—
1910	890	4.337.000
1913	1061	5.874.000
1914	879	4.872.000
1915	790	3.932.000
1916	819	4.082.000
1917	590	1.872.000
1918	479	1.091.000

IV. The Middle-Sized Harbours.

Only a few of these are discussed in the following article.

A. The harbour of Cheribon.

Cheribon situated on the great bay of Cheribon, [sheltered from the West Monsoon, was already in olden times a place of importance.

The favourable natural situation of the harbour brought about very little necessity for the construction of expensive harbourworks during the course of the years. Vessels anchor in the road-stead, while proas provide for the connection with the shore. These proas are now of such dimensions that the loading and discharging of cargo can take place without too much loss of time. They can be moored directly to the shore; landingstages, warehouses, cranes, etc. are here available.

Two proa harbours afford the necessary mooring-place. Care is taken for an undisturbed passage of the proas from the road-stead to these harbours.

The number of steamers which called at Cheribon amounted to:

In the year	Number	Net capacity in M ³
1909	586	3.023.000
1910	680	3.617.000
1911	652	3.765.000
1912	703	4.134.000
1913	747	4.455.000
1914	735	4.533.000
1915	654	3.989.000
1916	543	3.193.000
1917	490	2.548.000
1918	478	2.181.000

B. The harbour of Banjoewangi.

Banjoewangi is one of the important harbours of East Java.

The export of the main products was as follows:

In the year	in picols				in bales
	Sugar	Copra	Coffee	Rice	Tobacco
1910	119.000	48.000	7.000	19.000	7.000
1913	117.000	37.000	60.000	6.000	37.000
1914	61.000	51.000	73.000	24.000	25.000

The trade in fruit (principally bananas) to Australia is also of importance. In 1914 21.000 picols of fruit were shipped.

The harbour is provided with a proa basin, simple piers built out into the sea and the necessary harbour tracts connected with the railway.

C. The harbour of Amboina.

Already centuries ago the commercial traffic of the Mollucca Archipelago centred in the provincial capital Amboina.

The Bay of Amboina is about 6 nautical miles wide at its entrance, then widens noticeably to become more narrow again and to afford a small entrance to a harbour from 12 to 19 fathoms deep. On the east side of this, along the sheltered roadstead, extends the small town of Amboina.

On the south-west side of the inner-basin are a few harbour structures, which have been considerably improved during the last few years by the building of a concrete pier and the equipment of a harbour tract affording space for various storehouses.

The harbour tract is directly connected with the business centre by a wide road.

The number of incoming steamers amounted to:

in the year	Number	Net capacity in M ³
1910	104	413.700
1913	143	421.000
1914	168	491.000
1915	133	443.500
1916	140	406.600
1917	139	461.500
1918	124	351.300

D. The harbour of Manado.

In spite of the great difficulties, to which freight traffic is subjected at Manado through silting and a sandbank, which lies at the mouth of the Manado River, trade and shipping are advancing rapidly due to the prosperity of the regions which surround the harbour.

Not only the northern peninsula of Celebes, the Minahass, forms the hinterland, but the Sangir and the Talaud Islands and Bolang (Mongondon) must be also included.

Now that Manado is touched by ocean steamers sailing to Japan and East Asia, the products from Gorontalo, from the stretch along the Tomini Gulf and perhaps also those from Ternate will be shipped to this harbour.

In this respect, based on what has already been reported, great expectations may be entertained for the future.

Besides the more urgently necessary harbour improvements, which are being actively carried on, plans are already being considered for the construction of a harbour accessible to seagoing vessels. The harbour will have to be constructed landwards and will therefore demand large expenditures.

As soon as it becomes apparent that commercial traffic has assumed such proportions, that such expenditure will be profitable, a beginning will be made towards the realization of these plans.

The shipping was as follows:

Year	Number of ships	Net capacity in M ³
1910	140	562.000
1913	140	694.000
1914	136	720.000
1916	133	584.000
1918	150	633.000

The freight traffic for the capital Menado alone, not including the export to Sangir, North Coast, Gorontalo, etc. had a value.

in 1913 of	f	8.500.000
„ 1914 „	„	9.300.000
„ 1916 „	„	7.200.000
„ 1918 „	„	11.500.000

E. The harbour of Bandjermasin.

Bandjermasin, the capital of the residency South and East Division of Borneo, lies about 50 K.M. from the mouth of the Barito river and on the western bank of the Martapoera River, 9 K.M. from the junction of both rivers.

The situation of Bandjermasin with regard to the hinterland is very favourable for trade by reason of the navigable waterways on all sides. The place is the storage for the products of the enormous river basin of the Barito, a very lively goods-circulation taking place.

Especially the export of lumber and coal have very much increased during the last few years. While the lumber export in 1915 amounted to 10.000 M³, during 1917 this rose to 58.000 M³ and this figure will considerably increase as a result of the many wood-felling concessions granted and soon to be exploited. The export of coal in the last few years gives even more significant figures. While in 1915 only 2000 tons of coal were shipped from Bandjermasin, in 1916 this figure rose to 19.000 tons, while in 1917 even 53.000 tons were shipped.

As to how navigation has increased during the last few years, may be seen from the following table.

Year	Private steamers		Sailing vessels	
	Number	Net capacity in M ³	Number	Net capacity in M ³
1905	233	432.000	584	22.000
1910	321	494.000	549	12.000
1913	351	584.000	573	18.000
1915	357	611.000	653	20.000
1917	538	779.000	871	34.000
1918	415	546.000	856	34.000

The receipts of the custom-house office amounted in 1903 to round *f* 223.000; ten years later this amount rose to *f* 611.000, of which almost *f* 200.000 was exclusively from export duties on forest products.

F. The harbour of Pontianak.

Pontianak, the capital of the residency West Division of Borneo, is located 19 K.M. from the sea, on the left bank of the small Kapoeas River, one of the delta branches of the large Kapoeas River.

Founded in 1771, the town has properly developed, thanks to its extremely favourable location on one of the best navigable mouth branches of the mighty river.

The harbour establishment consists of an almost 500 M. long and 6.25 M. wide landingstage with sheds and offices in back of it, all constructed of wood.

A small drydock is also being built on the right bank to replace a similar construction, which became worn out.

On this right bank there are in addition coal storage places with a wharf, and tracts for oil storage.

The number of vessels, making use of this landingstage was for the different years:

Steamers arrived		
Year	Number	Net capacity in M ³
1911	326	253.000
1914	540	280.000
1917	332	254.000

Almost the entire import and export traffic of the residency is centred at the capital, while transportation almost exclusively takes place by water, which is quite natural in view of the enormous river basin of the Kapoeas and its branch rivers.

In 1917 the value of the import and the export together amounted to about 30 millions of guilders.

The receipts of the custom-house office amounted to:

f 440.000	in 1911
„ 617.000	„ 1914
„ 513.000	„ 1917

G. The harbour of Palembang.

If one sails from the Straits of Banka into the Moesi River, which has an average width of 1000 M. at its mouth, after 90 K.M. of steaming along this mighty river one arrives at the provincial capital Palembang.

The fact that this is the junction of a number of large rivers, navigable for hundreds of kilometres and along which one can penetrate deeply into the fertile hinterland, readily explains that an extensive business centre was formed here.

The harbour establishment for the seagoing vessels is directly downstream from the city, extending along both banks of the river Moesi, which at that point is 400 M. wide.

An opportunity for mooring is afforded by a landingstage on screw-piles 250 M. long and 11 M. wide, connected with the shore by means of three foot-bridges. The depth of the water at this landingstage is at least 10 M. at low tide.

Behind the wharf a spacious tract is available, partly taken up by storehouses and custom-house sheds, with a total area of round 3000 M², while for extension a tract located upstream has been reserved.

Besides this establishment Palembang has a number of larger and smaller mooring-places.

Upstream at the end of the built up part of Palembang and at the junction of the Ogan and Moesi Rivers the terminal point of the South Sumatra Railway is to be found. For the need of seagoing vessels which sail up to this point, a wharf is constructed, where the goods brought by railway can be directly transloaded. Adjoining this there is a coal-conveyer for the shipment by steamer of the coal from the Lematang coal-fields, which are exploited by the Government.

The value of the import and export amounted to:

Year	Import	Export	Total
1895	2.120.000	3.410.000	5.530.000
1905	4.640.000	12.120.000	16.760.000
1910	7.290.000	19.710.000	27.000.000
1915	9.650.000	25.000.000	34.650.000
1916	8.060.000	10.270.000	18.330.000
1917	11.330.000	24.320.000	35.650.000

The freight traffic seawards (for traffic towards the interior no correct figures are available) over a few years has been as follows:

Year	Departed					
	Steamers		Sailing vessels		lighters	
	Number	Net capacity in M ³ .	Number	Net capacity in M ³ .	Number	Net capacity in M ³ .
1905	564	706.000	482	29.500	—.—	—.—
1910	594	910.000	511	14.600	—.—	—.—
1913	572	844.000	426	57.000	43	135.000
1917	411	544.000	465	31.000	80	223.000

To overcome the difficulties presented by shallows at the entrance of the Moesi the digging of a canal 5 K.M. in length is being considered, which will connect the deep part of the river with the Banjoe-Asin Bay. This gulf generally offers a quiet water area of sufficient depth for most of the big ocean-liners.

Besides the canal a transloading station for ocean navigation might be established on the aforesaid bay.

Investigation of these still vague plans for the future is being actively carried on. In the meantime, in expectation of the outcome of this investigation, present conditions are being improved as much as possible by dredging the most shallow parts of the Moesi.

V. Management and Working of the Harbours

It is only for the past ten years, that any special attention has been paid to the management and the working of the harbours.

Experience has proved that as uniform as possible a regulation of the larger harbours must be based on the following principles.

The harbour enterprise must be conducted on a commercial basis, on the understanding, however, that no effort shall be made to make any profit.

As much as possible must be left to private initiative. The Harbour Service itself must take only a small part of the quays under its own management, together with the tracts, the sheds and warehouses, lying in back of them, only as many as is necessary to exert an influence on the manipulation of the goods in the harbour, to prevent the rates from being raised and to oppose the forming of a trust.

The Harbour Service must keep certain parts as a monopoly for itself, such as the ordinary mechanical equipment of the harbour, water- and electricity supply.

With regard to the general course of affairs, it is desirable, that continuity be striven for in the management and daily direction of the Harbour Service and that the harbour and everything connected with it, both administratively and financially shall be in charge of a board of directors under the supervision of the Government and classified under the Department of Civil Public Works.

Chiefly in connection with the lack of experience in the field of harbour management in this country, however, it has not seemed advisable so far to entrust the care of the more important harbours entirely to a board appointed for this purpose. As a temporary measure, therefore, the position of harbour director was successively established in the larger harbours and an advisory committee appointed to furnish this official with information in the interest of the management.

The first institution of this kind was formed January, 1912 for the harbour of Tandjong Priok.

The harbour director (preferably an engineer) has charge of the construction, upkeep, improvement and extension of the harbour establishment, besides the exploitation of the harbour. Propositions to be presented by him must first be submitted to the opinion of the Harbour Committee and this opinion to be included with the plans. The Committee may also on its own account make known its wishes to the Chief of the Department of Civil Public Works or to the Government.

The Committee is an advisory body. Its composition is not the same in all harbours, but is dependent on local conditions.

Besides the harbour director, who in this capacity acts both as chairman and member, the Committee consists of the following members:

the harbour master,

the chief official of import and export duties and excises,

a member appointed by the local council of the district in which the harbour is located, either from the council members or from outside. In the case of a municipality the mayor is often chosen for this purpose.

three members to be appointed by the Governor General from the commercial and navigation Co's., associated with the harbour, of whom one as a rule is a representative of ocean navigation, one of coast navigation and one of commerce.

Besides these, in the case of harbours, which are in direct connection with the State Railway system, a certain official of this service automatically becomes a member, while in the case of harbours with private railway connection an official of the Railroad or Tramway Service concerned assumes this position.

At Tandjong Priok a medical adviser, generally the harbour physician, appointed by the Chief of the Civil Medical Service, is added to the Committee

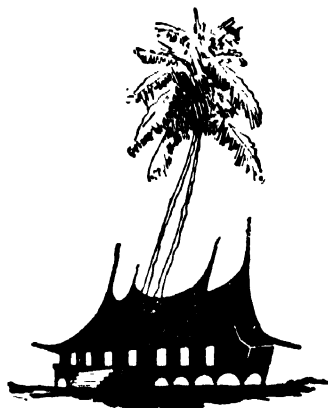
With regard to the membership of the Committee the only requirement is, that they shall be Netherlands citizens; for the rest there is no objection to the existence of business relations with a company or firm of foreign nationality.

The harbour domain is made up of the harbour tract and the harbour water area.

So far as the use of the grounds is directly influenced by the existence of a harbour, they are considered as belonging to the harbour premises.

Within the harbour domain exceptions of the general state-regulations for various purposes are gradually being allowed and their regulation left to the Director of Civil Public Works, who is authorized to entrust this task as much as possible to the harbour management.

A new regulation, whereby the harbour management (analogous with municipal and provincial councils in course of time to be called „harbour councils") has been made up so as to increase the representation of private interests and to limit the official element as much as possible.



SUNDRIES

The Obtaining of Long-Lease Rights

Inspection of Labour, Recruiting of Coolies and Colonisation

Dactyloscopy

The General Police

The Armed Police Corps

The Prison System

The Press



Sourabaya. Mouth of the Kali-Mas



CHAPTER XIV

The obtaining of long-lease rights

1. In territory under direct government.

Originally in the Dutch East-Indies such lands were given in lease for private agriculture as were suitable for this purpose and which were not being cultivated by the Natives or used as general grazing grounds or which did not in some other way belong to the villages or *dessas*.

The difficulties resulting on the one hand from the short term of the lease (at the most 20 years, for the cultivation of cocoanuts 40 years), on the other hand from the fact that the personal character of the lease did not allow the estate to bind itself as guarantee for the proper repayment of moneys borrowed for the need of exploitation, led to the first passing of the Agrarian Law of April 9th, 1870, (Indian State Gazette No. 55) by power of which, according to rules to be fixed by general ordinance, grounds are given in long-lease for a period not longer than seventy-five years. These rules were fixed by the Agrarian Decree (Royal Decree of July 20th, 1870, No. 15, Indian State Gazette No. 118) and by the colonial ordinance fixed as a result of this decree.

This ground-issue rests with the Governor-General, who, however, if he thinks it necessary, can transfer this authority wholly or in part to the Director of the Civil Service.

The aforesaid Agrarian Decree includes, among other things, the stipulation that the domains suitable for issue on long-lease shall be surveyed, described and charted by the Government, while every year a part of this shall be publicly offered on long-lease in tracts of about 500 *bouws* (according to a Government decision, at the most 550 *bouws* for each tract described by one letter of survey). This stipulation of the Agrarian Decree valid only for Java and Madura was at first carried out to the letter, but in consequence of the far from satisfactory results of the offers made, private release on request, which was also made possible by the decree, soon became the rule.

For the territory under direct government in the Outlying Possessions, in most of the provinces the issue of long-leases was originally regulated by colonial ordinances, according to the Agrarian Law and the chief principles of the Agrarian Decree. In the year, 1914, however, these regulations were replaced by a provision valid for the State territory in all Outlying Possessions (ordinance of April 25th, 1914, State Gazette No. 367), while the rights and obligations of long-lease holders were established on the same basis as fixed for Java and Madura by the ordinance of December 15th, 1913 (State Gazette No. 699).

Of course the conditions on the basis of which long-lease rights had been put into practise as a consequence of the agreement of long-lease holders, who were interested, remained in force with regard to these rights.

The rights and obligations of the long-lease holder of domain land are governed by the 8th section of the 2nd book of the Civil Code of the Dutch East-Indies, besides the conditions fixed by above-mentioned ordinance and the mine ordinances, the contents of which are mainly as follows,—that the long-lease holder:

- 1st. is allowed to work for his own use diggings-off and excavations of stone, clay or other similar species of soil belonging to the land and which are not the object of actual mining, but must allow the exploring or working of minerals only through the authorities or by power of permit or concession of the Government;
- 2nd. has the free disposal of all trees and plants, whether planted by himself or not, unless plainly stated otherwise in the contract;
- 3rd. is fined in case the amount of the lease is not paid to the State treasury within a fortnight after the lapse of the year in which it is due;
- 4th. to transfer his right he must have the permission of the Director of Civil Service, except when the lease tax which is due and a possible fine have been paid up to and including the year in which the transfer is made;
- 5th. to relinquish his long-lease rights he must have the consent of the Governor-General or the Director of the Civil Service;
- 6th. may lose his right when:
 - a. the lease tax has not been paid for three years, also in case it is not paid after the Government has given him a term of three months within which to make payment;
 - b. when he is obliged to bring a part of the ground under cultivation within a certain time, and when in the opinion of the Government this has not been done;
- 7th. must give notice within a month to the Head of the Province in which the land is situated, in case he transfers his longlease rights or assigns the management of the estate to a proxy, failing in which he is liable to a penalty not to exceed f 100.—.



Sourabaya. Establishment of the Deli Emigration Office (meal-time)

8th. must have a special permit for the construction of waterworks on the long-lease land and the use of water from springs, streams or aqueducts situated there.

Although the principle has always been that the issue on long-lease in a general sense aims to place otherwise worthless waste lands at disposal for the great agricultural industry, until a short time ago this was never positively stipulated. At present, however, the Government generally demands that the lands shall be used for agricultural purposes only.

In this country only the following may obtain domain land on long-lease:

- a. Dutch subjects,
- b. citizens of Holland,
- c. citizens of the Dutch East-Indies and
- d. trade partnerships established in Holland or in the Dutch East-Indies.

For the Outlying Possessions it is furthermore required that the persons or partnerships, not established in the Dutch East-Indies must be properly represented there, while in case the holder of a long-lease dies, if his claimants can not at once fulfill the requirements they are allowed a term of one year, beginning with the assignment of the heritage, to take the necessary steps to overcome the legal obstacle against their admission as long-lease holders.

In this case the Government considers trade partnerships as moral bodies possessing legal rights.

In the infrequent public offers of domain land in long-lease, an announcement is published in the official gazette and in numerous newspapers, wherein are given complete details regarding regulations governing the offer, the lowest bid, stipulated conditions, etc.

An offer of this kind is made according to the results of a local investigation conducted by the authorities.

The handling of underhand requests for the release of domain land in long-lease is regulated by two "instructions", one for Java and Madura and one for the Outlying Possessions. According to these instructions a written request for the release of lands in long-lease in Java and Madura must be directed to the Governor-General of the Dutch East-Indies and presented by the Head of Provincial Government and must be accompanied either by a letter of survey made by the cadastre at the expense of the petitioner or by a clear sketch map made up as accurately as possible, stating the location and boundaries of the desired land. No maximum is fixed for the area of land included in one request for long-lease, but no more than 550 bouws are described by one letter of survey.

After the Head of Provincial Government has received the petition and has signed it with the date of its receipt, he places it in the hands of the permanent commission, which has charge of local examination of long-lease requests.

If there are no preponderant obstacles againsts the requested issue (for instance in connection with the use already made of the land or with some purpose already assigned to it) then the request for long-lease is made public in the *dessas*, to which the desired land belongs and in the neighbouring villages, with the information, that during a month's time the population may present their objections to the petition.

In the meantime the commission makes a local investigation, in which the petitioner is obliged to assist by indicating personally the boundaries of the desired lands or to have this done by a proxy.

The opinions of the commission are set down in an official report, in which are also included any objections, which may have been made by the people and in which it gives its views concerning the requested land issue, the special terms to be recommended and the yearly amount of taxes, which it thinks should be demanded, the fixing of which is determined according to the quality and location of the lands.

The Head of Provincial Government, through the Director of Civil Service, sends the official report to the Governor General, accompanying it with a proposition from him and, if necessary, with the advice, which he has obtained from the other division-heads concerned (irrigation areas) and the forester (wood indemnification). After the request has been subjected also to the opinion of other department heads so far as necessary, it is handled by decree.

The promise of the long-lease resulting from a request, whereby, as is the rule, only a sketch map is produced of the land, which is to be made over, bears only a temporary character. It includes the consent of the Government to grant the long-lease right to the lands under consideration for issue on the basis of then existing regulations „such as these might be revised and completed in the meantime” and under the particular conditions indicated in the decree, providing that the petitioner within a certain length of time (usually fixed at six months or more, if necessary) produces a letter of survey with a request for a permanent assignment. After the aforesaid temporary pledge and after any demanded indemnification has been paid to the population according to communication of the petitioner, after the advance demanded for the setting of the surveying costs has been received by the proper cadastral office, the requisite permanent boundary marks have been placed and the clearing of boundary lines necessary for surveying is ready, the members of the commission go to the requested land in the presence of the surveyor, so as to assure themselves that no other lands are staked for survey and indicated than

those, which the Government has declared its willingness to give in long-lease and at the same time to give their opinion in an official report in connection with any further provisions, which may be necessary for the definite pledge.

In case the petition is accompanied by a letter of survey, describing the land considered for issue, then of course the making up of the aforesaid sketch map may be dispensed with, while the Government, instead of making a temporary pledge makes one of a permanent nature at once. The petitioner sends the letter of survey to the Head of Provincial Government with the aforesaid request for a fixed promise of the long-lease rights and the latter, through the intervention of the Director of the Civil Service, sends on the documents to the Government, after adding the necessary papers (the forester's advice, the official report of the second investigation, etc., and his own proposition). The definite consent to the long-lease rights contains a complete statement of the regulations, which will hold for the right to be granted besides the concerning regulations in the Civil Code for the Dutch East-Indies, the conditions, under which it is disposed to grant the land in long-lease, among which conditions is the express demand, that the acceptance of the promised long-lease rights shall take place within six months after the date of the decree, except when it is found necessary to extend this term.

Neither the temporary nor the fixed pledge gives the holder the right to take the land into use.

This right is only obtained after the long-lease right has been entered in the public registers, kept for that purpose (establishing the long-lease right). The essential part of the Government Decree, referring to the request is usually entered in full in the legal deed, whereby the long-lease right is established in the name of the person who obtains it.

If it is necessary for the petitioner to begin at once with the cultivation of the land, then upon his request he may be given permission for this through the Director of the Civil Service.

Requests for lands on long-lease in the Outlying Possessions are handled practically in the same way as above described for Java and Madura.

The most important deviations, except those, resulting from a somewhat different government organisation, are the following:

- 1st. Each petition may not refer to a greater area than 5000 bouws;
- 2nd. As a rule the granting of the long-lease right is based on a sketch map, which complies with certain requirements.

When the lands are situated in a province, for which maps in detail can be obtained from the Topographical Service, then the boundaries of the requested tract must be clearly defined either on those

maps or on exact copies of them. Where there are no maps of the country, or only unreliable ones, special attention must be paid to the laying of the corner stones of the tract. In both cases a complete description of the boundaries of the requested tract is necessary.

A letter of survey can be demanded only in the provinces or parts of provinces, indicated by the Director of the Civil Service, and when, moreover, the small extent of the requested land makes it necessary, according to his opinion;

3rd. The Head of Provincial Government notifies the petitioner in writing, fixing a certain term, within which he must clear footpaths and in other ways make it possible for the commission to do the local surveying of the land.

This term, which is amply fixed, is only extended once in case in the meantime some one else requests the same land, either entirely or in part in long-lease;

4th. The long-lease right is granted without previous temporary promise according to a Government decree, whereby the term for the acceptance of that right is customarily fixed at one year after the date of said decree.

5th. In general, when the yearly tax sum is fixed, which is a certain amount, according to the distance on the sketch map and which a later survey can only change by consent of the Government, a maximum of f1.— per bouw is charged.

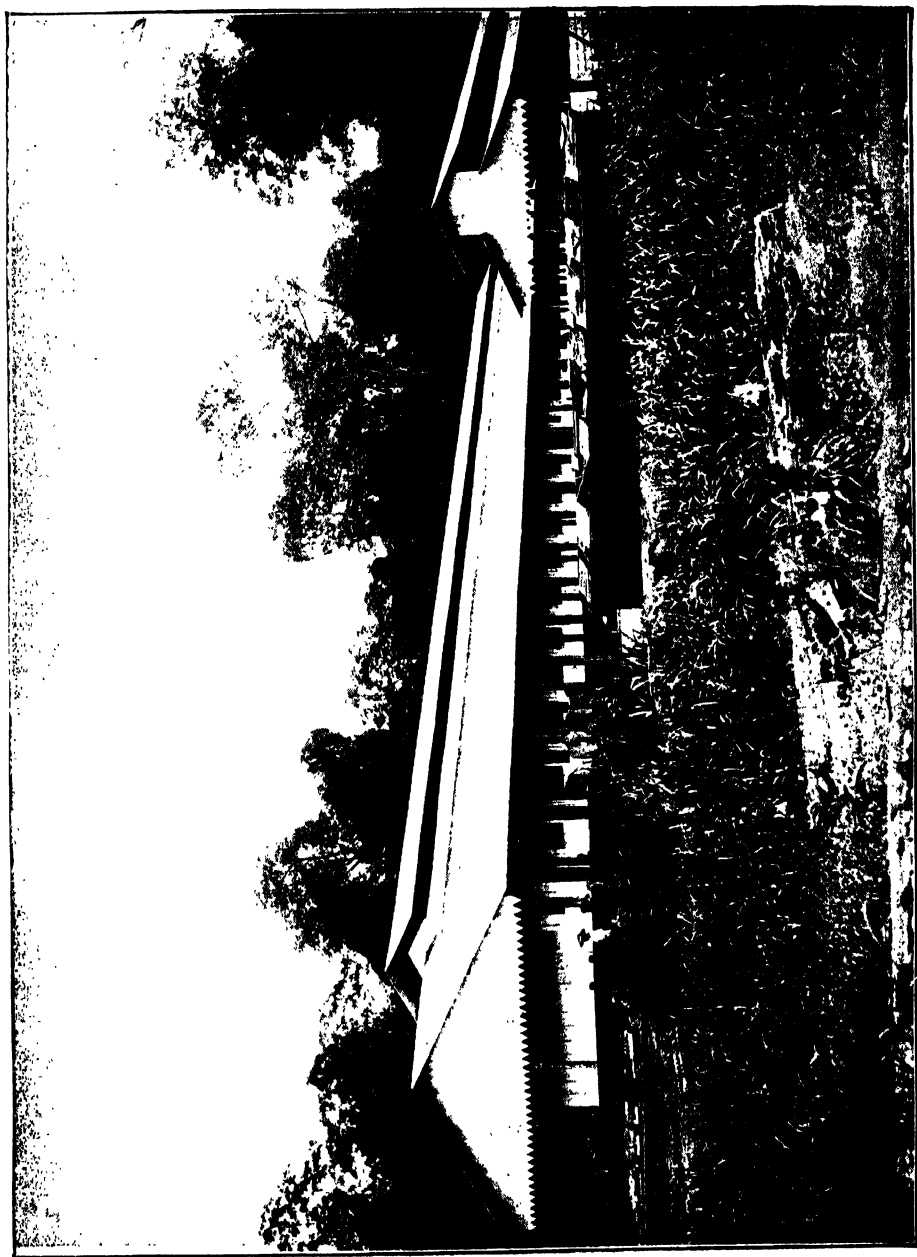
In special cases, particularly for tracts of small area, this land rent can be fixed at a higher amount.

In Java and Madura as well as in the Outlying Possessions there is a legal exemption from the payment of land rent and ground-tax during respectively the first five and ten years, but the Governor General is authorized to evade this rule, in case the requested lands consist of tracts formerly under long-lease or in case they are wholly or partly under cultivation.

II. In self-governing communities in the provinces outside Java and Madura.

The interference of the Dutch East Indian Government in agrarian affairs in the self-governing communities is based on regulations, expressly ordained in the political contracts, referring to this subject, or arises from the aim of these contracts, and among other things has led to the issue of so-called farming concessions in the interest of the agricultural industry.

In some communities this issue is made by the self-government, except that it must be approved by the Head of Provincial Government, in other communities by the Head of Provincial Government, in the name of the



Labourer's quarters on the Biggepang-estate, East Coast of Sumatra

Governor General. The lastnamed concessions must be definitely accepted within the term fixed for that purpose.

With the exception of the Government East Coast of Sumatra the same demands are in force for admission as holder of an agricultural concession as above mentioned for long-lease holders of domain land in the Outlying Possessions, with this understanding, that concession holders must choose their domicile at the office of the Head of Provincial (or local) Government.

The concessions include an agreement for the carrying on of an agricultural enterprise on the parts of the concession land suitable for this purpose.

Often such a concession tract consists partly of lands, belonging to the population, which, if desired, must remain at the disposal of the owners and whose extension must in some cases be tolerated by the holder of the concession.

For the need of the Country's service the land, considered for this purpose, must also be put at disposal free of charge. With regard to the tolerating of mineralogical research and mining, either by the Government or third parties, the using of soil-species for the owner's benefit and the disposing, for the needs of the agricultural enterprise, of the wood present on the concession land, almost similar regulations are in force as for those, holding domain land in long-lease.

Of course the regulations, included in the concessiondeed are in force for parties. If in consequence of this deed differences should spring up, then the Head of Provincial Government decides, if the interests of the population are involved; otherwise the decision of a court of arbitrators may be called for.

With regard to the yearly rent, often called cense (cijns), a minimum of $\text{f } 1.-$ per H.A. is usually charged, with this understanding, that for the charging of a lower cense the authorization of the Government is necessary.

The grounds may not cover a larger area than 5000 bouws, except by approval of the Government, and are given for not longer than 75 years.

In the first years of the concession a partial exemption from the cense payment is allowed in this way, that over the first year $\frac{1}{5}$ of the fixed yearly lease-sum is demanded, over the second year $\frac{2}{5}$ and so on, so that the full cense is paid for the first time over the fifth year. In case the holder of the concession fails to meet his obligations he may be legally summoned for payment, while, if he does not then pay the cense, the concession is legally forfeited three months after said summons.

The institution of agricultural concessions is not free from grave faults, which are not entirely to be abolished. In the interest of the

agricultural industry, therefore, the possibility is opened in the selfgoverning communities, also, to obtain the long-lease right.

In „Staatsblad” 1919, No. 61 was proclaimed the long-lease ordinance of February 6th, 1919 for the self-governing communities outside of Java and Madura, based on which lands may be given out in long-lease through the self-governing communities with the approval of the Head of Provincial Government for the benefit of persons, to whom are applicable the regulations of the Civil Code of the Dutch East-Indies concerning essential rights.

The regulations of this ordinance in the main correspond with similar regulations concerning the long-lease issue in the territory under direct control in the Outlying Possessions.

The long-lease petitions, which may not refer to a greater area than 3500 H. A., is presented through the intervention of the Head of Provincial Government to the self-government. The commission of investigation is appointed by said government Head in deliberation with the self-government; it brings an official report of its opinions to the self-government and to the Head of Provincial Government. The costs of the investigation may be entirely or in part at the expense of the petitioner, this to be decided by the Head of Provincial Government. As manager and overseer and assistant only such persons may be employed on the long-lease lands as have obtained a written permit, given for this purpose by the Head of Provincial Government and valid until recalled by him. They, as well as the holder of the long-lease and his representative, are required to give information regarding the estate for the benefit of the Government.

The yearly land rent, owed to the community concerned, amounts to at least f 1.— per H. A., which amount can be decreased in special cases or for special regions, to be decided by the Director of the Civil Service, while partial exemption during the first years is given in the same way as above indicated for the cense of agricultural concessions.

The above mentioned long-lease ordinance goes into effect, as far as necessary for provinces or for parts of provinces, on dates to be more explicitly indicated by the Governor General.

Inspection of Labour, Recruiting of Coolies and Colonisation.

Inspection of Labour.

While in Java and Madura the need for labourers is supplied by the use of indigenous workers, this is not the case in the Outlying Possessions and the necessary labourers must be imported from elsewhere.

This circumstance influences labour conditions, which in Java and Madura are ruled exclusively by the regulations of the civil law, while

in the Outlying Possessions they are besides subject to special ordinances enacted apart from that law. Furthermore in connection herewith the recruiting of labourers in Java and Madura for estates established there is not regulated by law, but the recruiting of Natives on these islands as labourers for estates in the Outlying Possessions is placed under supervision of the authorities.

The aforesaid special ordinances which, besides the civil law, determine labour conditions in the Outlying Possessions, are divided into:

a. the so-called coolie ordinances with penal responsibility for the fulfillment of certain agreements of the labour contracts closed according to those ordinances and

b. the ordinances, which govern the labour contracts, concluded on some other basis than that specified sub *a.*

The labour agreements specified in the former paragraph can not be closed with labourers, belonging to the indigenous population of the division (province) in which the estate of the employer is situated, in which class, in the provinces for which a new coolie ordinance has been enacted since 1915, are included those who are descendants of Natives from outside the province, but who have been born and brought up there. Other labourers are obliged to enter into the agreements, mentioned under either *a* or *b*, unless they are doing contract work or performing some special service.

The object of the regulations mentioned under *a* and *b* is twofold and aims to provide the employer in sparsely populated districts with labourers and regular work as well as to assure the labourer of the necessary protection. For the latter purpose the rights and obligations of both parties are specified in the coolie ordinances.

According to these ordinances the work contracts mentioned therein may be made for at most three years, must satisfy certain requirements and be drawn up in accordance with a prescribed form.

The employer obligates himself, among other things, to good treatment, regular payment of wages, free lodging and medical treatment including medicines, a supply of good water for bathing and drinking and the return of the labourers to the place from which they were recruited, after the expiration of the contracts or in case the labourers are unable to fulfill their agreements. The number of working hours may not exceed ten a day.

The labourers, on the other hand, bind themselves to regular labour, to obey orders in connection with the work and to behave strictly in accordance with the terms of the contract.

Any arbitrary breach of a labour contract on the part of the employer is punished by a fine, while a similar breach on the part of the labourer is punished by a fine or imprisonment. The principal misdemeanours punishable are: opposition, insult or threat, quarreling, inciting to desertion, refusal to work, fighting or drunkenness.

The labour contracts closed in accordance with ordinances under *b* are not bound to any prescribed form and may be made either verbally or in writing for a definite period. The Government does not supervise the booking and registration of the names of these labourers, but the registration must always be kept open for inspection by civil service officials and inspectors of labour.

The Service of the Inspection of Labour supervises the legal relation between employers and employees and sees that the aforesaid agreements are properly carried out. The inspectors and assistant-inspectors of this service therefore regularly visit the estates, which come under consideration for this purpose, where they make an investigation into the conditions existing there, receive any possible complaints and as much as possible adjust any differences between employer and employee. They report the results of their investigation to the Head of the Service, who, if necessary, makes or proposes such regulations, as will lead to a proper labour condition on the estates.

Recruiting of Coolies.

The recruiting in Java and Madura of labourers intended for estates in the Outlying Possessions was placed under Government supervision in 1909. Originally it was carried out exclusively by persons or corporations (recruiting agents), who made this their profession, for which they must have a permit from the Department of Justice, the so-called professional recruiting. Besides this professional recruiting an opportunity has since then been opened to employers themselves to recruit labourers in Java and Madura exclusively for their own use, the so-called private recruiting, for which they also must have a permit from the Director.

According to existing regulations (recruiting ordinance) the employer can only close contracts with future employees through the intermediacy of a recruiting agent or through his own recruiting.

The law imposes on the recruiting agents (in private recruiting the manager) obligations with regard to the lodging and feeding of recruited coolies temporarily gathered in depots, while waiting to be taken to their destination. Medical examination at the expense of the recruiting agent, or the manager is also required. The result of this examination, which must ascertain whether the recruit is physically fit for the labour for which he is engaged, is set down by the doctor in a certificate.

Without such a certificate and without a declaration, signed by the authority, concerned, stating that the recruit agrees with the main clauses of the labour contract, no legal labour-contract can be made.

The deed of labour agreements must be drawn up in the presence of the recruiting commissioner in the port of shipment, who ascertains, before lending his assistance, that the contents of the contract are clear



to both parties and who must refuse his co-operation, when there appears to be any compulsion, fraud or misconception.

On a limited scale recruiting takes place for the plantations in the Dutch colony of Suriname. With this exception the recruiting of Natives for labour outside the Dutch East-Indies is prohibited. Under special conditions dispensation from this prohibition ordinance may be given.

Among the corporations, who have made use of the opportunity to do their own recruiting, are two great planters' unions on the East Coast of Sumatra (the A.V.R.O.S. and the D.P.V.), which together have established the General Deli Emigration Office (Algemeen Delisch Emigratie-kantoor or A.D.E.K.), an office, which has its own very spacious establishments, fulfilling all modern requirements, and to which is connected a salaried staff in permanent employment. The making of profits by this staff as well as by the corporation is entirely excluded, by which method evil practices, which can not be entirely avoided in professional recruiting, are effectively prevented.

The labourers are repeatedly told, what they are binding themselves to; they are always free to return, if they make known their desire to emigrate, without any difficulties being placed in their way.

In this way free emigration is being prepared for, which also takes place through another system of recruiting, which is coming more into vogue, i. e. through letting labourers, who are especially adapted and inclined for this and who have already worked a long time in Deli, go to Java in order to return again with new hands, whom they themselves have found favourably inclined to emigration. This is the so-called „laukeh”¹⁾ recruiting, and, providing trustworthy persons are employed, may turn out to be a big step in the right direction. From the nature of things this system is only possible for estates, which have been established for a long time and where are enough suitable people among the labourers, so that at present it is most practiced on the estates of tobacco companies, which have been a long time established.

The emigrants are transported at the expense of the employer from Java to Deli by especially accommodated steamers of the K.P.M., which, according to an agreement with the planters' unions, must have a doctor on board. Upon arrival in Deli the recruits are placed in lodging houses, especially equipped and under medical supervision in the capital Medan, from which place they set out for the various estates, with which they have made contracts.

As a rule the labourers bind themselves to work on an estate for three years, the maximum time permitted by the law. After the expiration of the first period of service the labourers may renew their con-

1) „Laukeh” is the Chinese word used on the East Coast to denote an old hand, as opposed to „Singkeh” (beginner).

tracts, if they so desire. These are made for a shorter period, since no more expenses are being made by the employer, and for higher wages, because an experienced worker is worth more than a beginner. In case the labourer does not wish to renew his contract, he is entitled to return to Java at the expense of his employer.

The daily wages paid to a new hand are not high, but if he is a good workman, he can soon earn more with piece- or task work. Moreover in the course of time the employers have taken it upon themselves to supply the labourers and their families with the necessary foodstuffs at moderate prices; at present rice, which is furnished to the labourers at f 0.10 a katti, costs the employer f 0.45, which calls for an enormous expenditure. Partly for this reason, but mainly because of the great difficulty of obtaining the necessary quantity of rice at the present time, they have decided to furnish less rice but other foodstuffs instead, such as maize, oebi and katella, which in the main has proved very satisfactory and in the end is to the labourers' advantage, because the greater variety in food can not fail to have a beneficial influence on their health.

Besides their wages in money the labourers are also furnished free with lodgings, medical treatment and nursing; in Deli this is generally done on a most generous scale. Several systems of housing are in practice, depending on conditions and also on the general preference of the workers. For the most part they live all together in large buildings, where in every case the married couples have a room for their own use. There are also small groups of separate houses, mainly to induce the labourers to remain as colonists on the estates after the term of service, to which they have agreed, has expired.

The medical treatment and care are excellent; everywhere the employers have central hospitals with an expert staff, so that in this respect Deli may be considered a model for many other countries.

In other ways, also, appealing more to the heart, the employer tries to make things pleasant for the Javanese labourer, for instance through Native puppet shows and orchestras („wajang" play and „gamelan") and in more recent times of course also through cinematograph performances, the great attraction for the Native. The moral and intellectual welfare of the worker have also demanded attention in the last few years and in this direction successful work has been done by having hired „penghoeloes" (Native priests) attached to the estate, to encourage family life and to cherish what is good in their old customs, and through support from the Government establishing public schools on the plan of the Javanese dessa schools.

Most of the employers take care that their labourers are as well treated as already explained with regard to the labourers of the A.V.R.O.S. and D.P.V.

The wages vary according to the nature of the work. In districts, where commodities are particularly dear, the wages of the contract labourers are sometimes higher, while for work in the mines higher wages are also paid and food is usually supplied free of charge.

Compared with the number of contract labourers, who leave Java, the number that returns is small. There are estates, where from 60 to 80 % are re-employed. Those who do not sign a new contract and do not remain on the estates as contract labourers, often establish themselves as free workmen, farmers, retailers or domestic servants.

Colonisation.

The increasing need of labourers for the European estates in the Outlying Possessions and the vast fruitful tracts there, the development of which has come into the foreground and which are waiting to be cleared, have, besides recruiting of Javanese labourers, brought up the problem of moving some of the inhabitants of densely populated Java to the Outlying provinces.

In 1904 an experiment in colonisation was made in some tracts near Gedong Tataän in the Lampong Districts, which experiment may be called an entire success, due in a large measure to laying of a good irrigation system and the great extension of the irrigated ricefields resulting from it, which in the main must be regarded as the first requisite for the success of colonisation experiments with Javanese families in the Outlying Possessions.

The general direction of the colonisation experiment at Gedong Tataän is in the hands of the Resident, under whose direct orders is placed the person in charge of the local management.

At the end of 1918 the colony numbered 2339 families consisting of 8903 people. It is planned in the near future to increase this number with 20,000 families, as soon as there is any certainty regarding the possibility of drainage and irrigation of some lands situated in the neighbourhood.

Originally the recruiting took place exclusively through the agency of the Native government in Java, principally in the residencies Karang-anjar, Keboemen and Poerworedjo, but at present a Native official under the orders of the Resident of Kedoe is assigned to carry out this work.

Gradually emigrants are presenting themselves more and more of their own free will.

The new colonists are allowed free transport to the place of their destination.

In addition an advance is loaned to each family for the payment of debts, the procuring of an outfit, the buying of tools, etc., which advance is made through the Lampong Bank, a credit institution at Telok Betong, organised on the same basis as the division banks in Java.

In the residency of Benkoolen a colonisation experiment has also been made with Sundanese and Javanese on land situated in the neighbourhood of Kepahiang and of Moeara Aman, while there are also plans to take colonisation vigorously in hand in other parts of the Outlying Possessions with Native families from Java. For this purpose a Native staff will be put into training at Gedong Tataän.

For Banjoewangi, also, the colonisation question is being given due attention by the Government. Already several hundred families have been brought over from Kediri at the expense of the State.

Dactyloscopy

To provide for the need of a quick, simple and trustworthy means of identification for the thousands of minor officials and clerks in Government and private service, a Central Bureau for Dactyloscopy has been established, which is connected with the Department of Justice.

The personal descriptions, which are made by various branches of the Government Service, are examined and collected at this Bureau.

The examination consists in tracing whether there is in the collection of the Central Bureau — which now contains about 40,000 descriptions — a duplicate description of the same person. If this appears to be the case, then the notes on the reverse side of both descriptions concerning birth-place, age, education, certificates and/or diplomas, position, salary, etc. are compared and if there is any occasion the authority concerned is informed of the differences. As a rule the descriptions sent in are examined on the day of receipt.

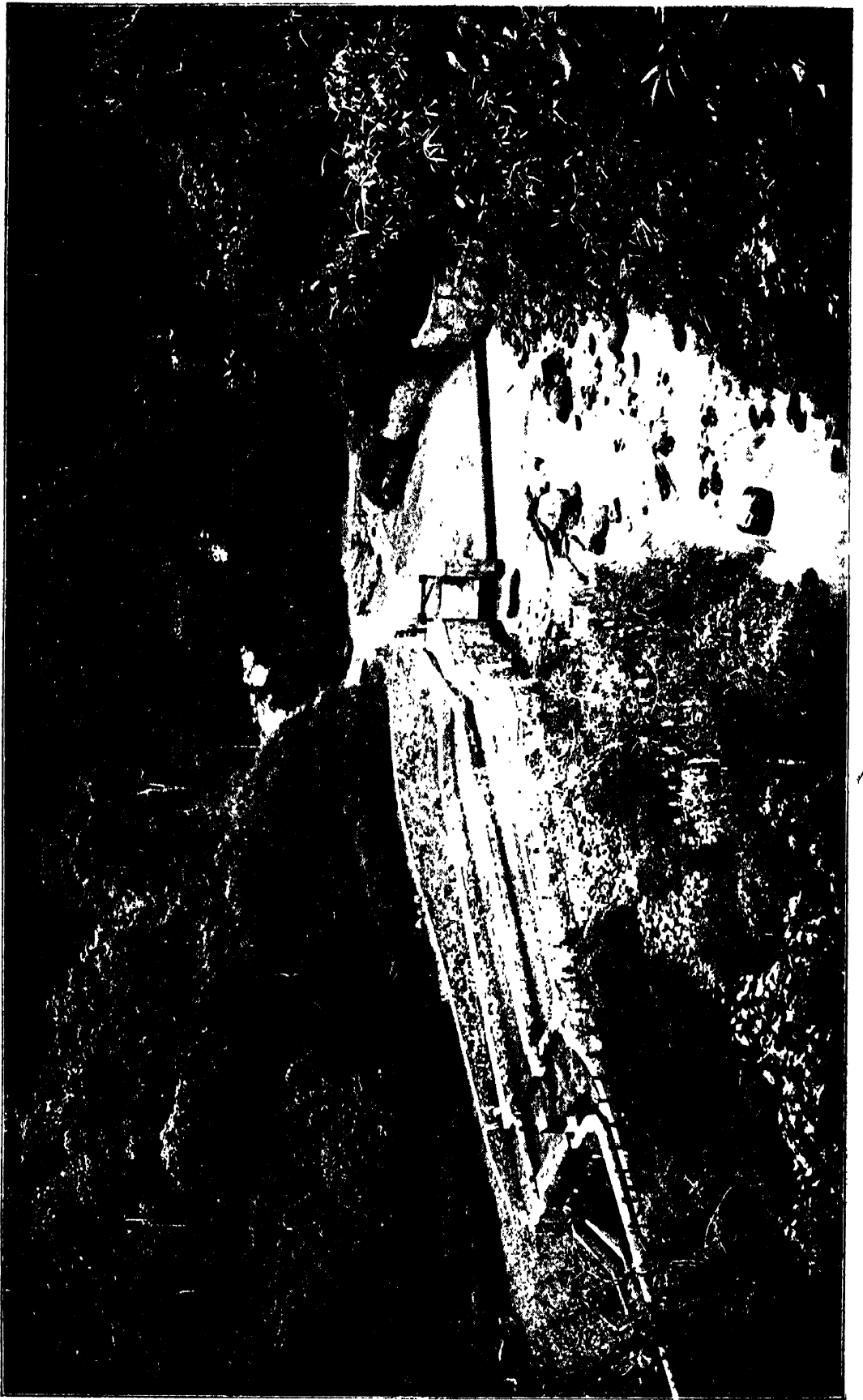
The descriptions are kept in filing cabinets, in which they are classed according to certain values, which are derived from the unchangeable course of the lines in the fingerprints. The search for a description takes place independently on the name or any other note on the description. The above mentioned values are arranged according to the Henry-system.

At present the Central Bureau receives descriptions:

- a. of the staff of the State Railway Service.
- b. of the Civil Service Staff of several provinces in Java.
- c. of the Native staff of the Pawnshop Service.
- d. of the „non-European” persons, who wish to join the army as well as of the Native military men, who have joined since January 1st, 1913.
- e. of the staff of various division banks.

It is the intention to include gradually in the collection of the Dactyloscopic Bureau also the descriptions of the staffs of other branches of service.

The Central Bureau of Dactyloscopy also makes reports to courts, judges and also other institutions and persons regarding fingerprints left



behind in cases of crime and which are offered for examination. For the making of photographic reproductions eventually to be produced with these reports, the bureau has the disposal of a good photographic studio.

Advice in the field of dactyloscopy is generally given by the Bureau free of charge.

The usefulness of this institution is being more and more realized and appreciated. An increasing use of this quick and above all sure means of identification by government institutions as well as by private individuals is therefore soon to be expected.

Among the favourable results, which have already been obtained through the practice of this system in the Dutch East-Indies, mention need only be made here of the considerable decrease in the number of cases of desertion in the army.

The General Police.

It is the task of the General Police to see, that all regulations for the maintenance of peace and order are carried out. They are also empowered by the Government to forcibly prevent any meetings, festivities, etc., which are held without the consent of the authorities. It is also a part of their work to trace any clandestine sale of opium and to see that the traffic in the roads and the streets is going on safely.

The police force is divided into:

- a. the police of the populated centres and
- b. the so-called provincial police.

Europeans as well as Natives serve in both divisions. The European staff consists of chief- and assistant-chief commissaries, commissaries, chief police inspectors, police inspectors, chief police and chief detectives; the Native staff of wadanas and assistant wadanas of police, mantris police, detectives, post-house commanders and policemen.

The superintendence of the entire corps is entrusted to the Attorney General of the Supreme Court of Netherlands India: the management is in the hands of the Director of Civil Service. As Head of this service, working under the orders of these authorities, there will be an Inspector of General Police, assisted by an assistant-inspector.

In Java and Madura a police court is established for misdemeanors and minor offences, which court is in charge of the „Landgerechten”. Lawyers or former officials of the Civil Service serve as judges.

It is not possible to appeal from the decision of the „Landgerechten” to a higher court of justice.

The training of the graduate police officials takes place at the Police school in Batavia.

The armed police corps.

I. Organisation.

The Armed Police Corps in Netherlands India consists of 22 divisions, of which 19 are in the Outlying Possessions (one for each province) and 3 in Java (one for Western-, one for Central- and one for Eastern Java).

Furthermore a central station is established at Soekaboemi for the training of recruits and skeleton.

The divisions and the Central station are under the control of division commanders of the first class, being captains (majors) with a pension or attached to the army „in commemoration”.

In provinces, where the extensiveness of the area makes it necessary, the divisions referred to are separated into two or more sub-divisions, which, under the general control of the division commander, are commanded by sub-lieutenants, who are either pensioned or taken direct from the army and who have the rank of division commander of the second class or sub-division commander. This is the case at present in the provinces East Coast of Sumatra, West Coast of Sumatra, Timor & Dependencies, Amboina, Ternate & Dependencies and Celebes & Dependencies.

Each division or sub-division consists of a certain number of brigades, each under the command of a sergeant distributed over various government posts and lodged there in barracks.

Semibrigades, also, are often used independently.

Regularly the brigade consists of: 1 sergeant, 2 corporals and 18 policemen; and the independent semibrigade of 1 corporal and 8 policemen.

Separately lodged detachments, which have the strength of one brigade or more, are under the command of a European Detachment Commander of the first or second class, or of a non-European Detachment Commander, depending on the importance and the strength of the detachment.

The armament of the Corps consists still for the most part of the Beaumont carbine and the constabulary sabre. The firearm in use, however, is being gradually replaced by the repeating carbine M.95.

In various districts certain brigades are provided with bicycles, in order, if necessary, to make their way quickly to distant places.

The administration of each division is as a rule assigned to 1 administrative sergeant of the first class and 1 administrative sergeant of the second class, while to each independent sub-division is attached also 1 administrative sergeant of the second class.

II. Working sphere.

In the Official Gazette for 1912, No.576, among other things is announced as follows:

A. The armed police is at the service of the Civil Government for:

a. the assurance of peace, order and safety in the interior;

- b. the maintenance of authority in times of disturbance, until the army, if necessary, can take over the task;
- c. the establishing of regular conditions in districts, which have only recently come under our effectual authority, by giving support to the law, by forcing obedience, if necessary, to orders given, by protecting the loyal population against the bad elements etc.

B. The Chiefs of Provincial Government have general supervision in its broadest sense over the armed police encamped in their premises and, within the boundaries mentioned under A., complete disposal of the police force, just as the Government officials under them have complete disposal of the divisions of the police force, who are encamped or detached in their resorts.

The armed police, therefore, is a means of government at the service of the Department of the Interior. It is not a police force in the narrow, everyday sense of the word, but its sphere of activity lies between that of the general police and the task of the army in so far as that task concerns the maintenance of order in the Colonies.

III. Technical management.

This is for the whole corps conferred on the Chief of the Armed Police Corps and includes: the recruiting, training, armament and administration, as well as the maintenance of discipline in the corps.

In these duties he is assisted by the Sub-commander of the Corps and by an Assistant-Inspector, which posts are filled exclusively by ex-superior or subaltern officers of the army.

The division commanders are charged in general with the technical leadership and command of their division, with the exercising of the right of discipline and with the control of the administrative management, and have, therefore, full responsibility for the skill of their division and the maintenance of its discipline, also for the administration of buildings and materials in use by their divisions.

The Prison System.

The Director of the Department of Justice is appointed for the general management and superintending of the prisons.

He is assisted by the Chief of the Prison System, under whose authority are the Prison Inspectors.

The Inspectors are charged in the first place with the overseeing of industries and trades in which the prisoners are engaged.

All who are sentenced to imprisonment are obliged to work. The labour is classified as that which is done *inside* or *outside* the prison walls.

Work *outside* the prison can only be exacted in certain cases, from which female prisoners are always exempt.

The nature of the work performed by those who work outside the prison walls is very diverse.

Especially deserving of mention is the disposal of convicts for work in the Ombilin Mines at Sawah Loento. Three thousand convicts are regularly at work digging coal in these mines.

Furthermore a very large part of the valid convicts is assigned to the War Department for the performance of coolie service on military expeditions, excursions and explorations. To the troops stationed in the province of Acheen are already assigned over seventeen hundred convicts, while in the other provinces of the Outlying Possessions about an equal number is distributed among the troops stationed or manœuvring there.

The Department of Civil Public Works also has the continuous disposition of a great number of convicts for the building, improvement and upkeep of roads and for the execution of irrigation and sanitation works.

Of very great importance, finally, is the compulsory labour of convicts on the rubber estates of Noesa Kembangan. The production of this industry, which was taken over by the Prison System in 1911 from the Forestry Service, is still increasing steadily, though the original plantings have not been increased.

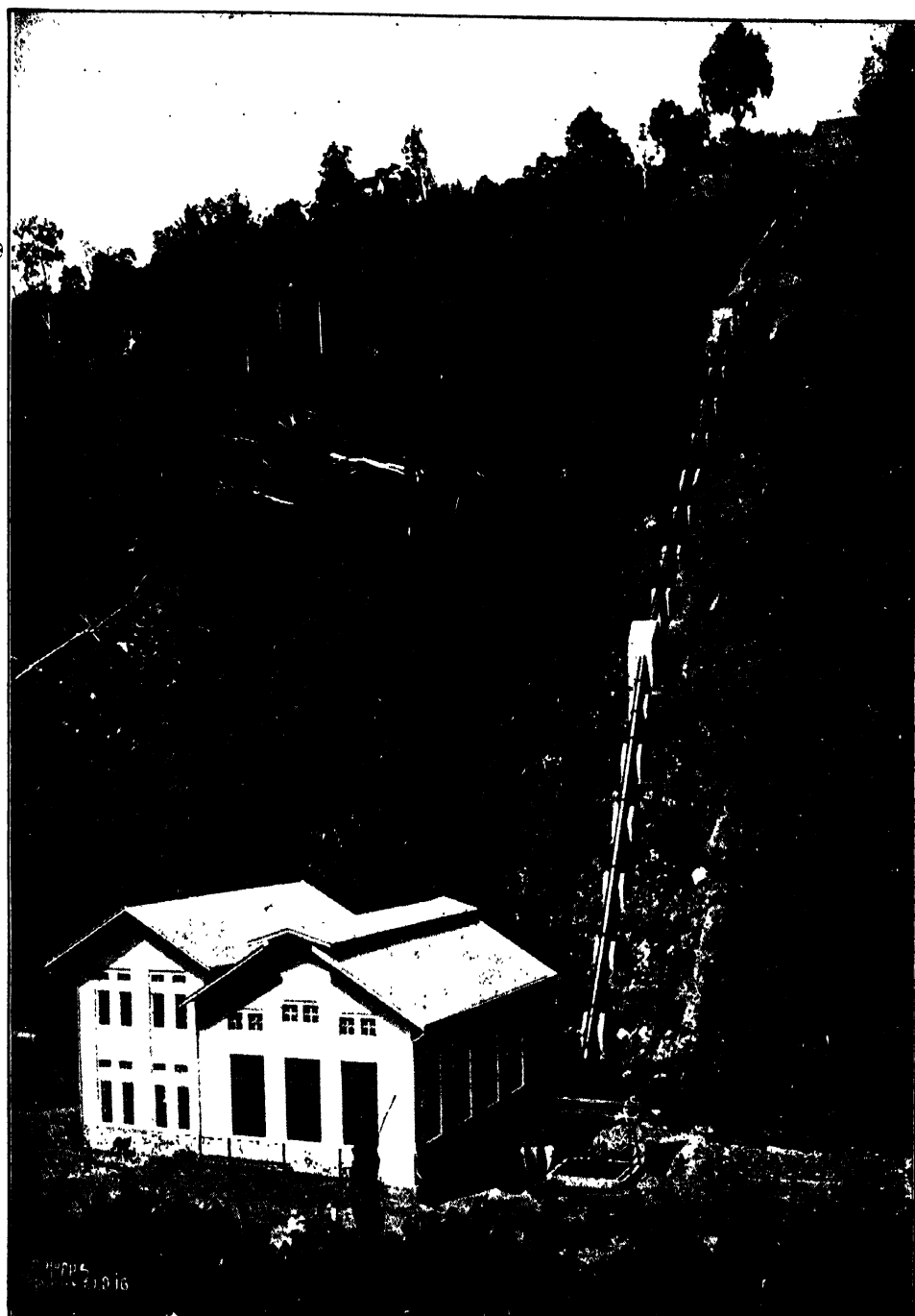
The labour done *within* the prison walls by convicts is utilized as much as possible for the making of articles necessary for the different branches of the Government Service. Articles made, which do not serve for this purpose, are sold.

The following trades and handicrafts are practised in the various penitentiaries: carpentry, forging, coopery, bookbinding, bookprinting, soapmaking, saddlemaking, tanning, basketry, handweaving, batiks, and the plaiting of hats, cocoa-mats, sleepingmats and rope.

By prisoners in institutions connected with the penitentiaries are carried on the following industries: 5 tailoring shops, 2 tinsmithies, 1 shoe shop, 1 brush factory, 1 sailmaking establishment, a mechanical weaving manufactory, a machinerun dye-shop, bleachery and application locality, a machinerun sock and stocking manufactory, a machinerun laundry and a machinerun button factory, 2 cement tile factories, a factory for various cement articles and concrete and a rubber factory.

The Press.

Since 1906 no preventive measures have been passed regarding the publishing of thoughts and feelings through the medium of the printed press. In that year, by abolishing the restricting regulations, which until



Machine-building Government waterpowerworks at Tjatoer

then had been in force, the freedom of the press was inaugurated in this country.

The supervision of the Government over the printed press is now confined to the rule that the printer or publisher of any printed matter in the Dutch East-Indies (among which are included daily papers and other periodicals) must send a signed copy of the paper, within 24 hours after its publishing, to the Head of Local Government. For printed matter outside the Dutch East-Indies, but printed elsewhere than in Holland and given out in the Dutch East-Indies, the same rule applies. Failure to comply with this regulation is punishable by fine.

The Governor General is also authorized to forbid the spreading of reports, by means of the printed press, regarding the movements of troops and ships, as well as the importing and distributing in the Dutch East-Indies of foreign printed matter, which is considered dangerous.

Many periodicals, some of statistical value, are given out in the Dutch East-Indies by the Government (for complete details see supplement PP. of the first part of the Government Almanac for 1920) as well as by others.

Besides a considerable number of periodicals of a professional or other nature, which as a rule are published once a month, also a certain number of union and association organs, many daily and weekly papers are given out in Dutch as well as in one of the Native languages. The foremost of these are included in the list given below, in which may be seen also the names of the cities in which these periodicals are published.

Periodicals appearing in Dutch:

at Batavia:

Het Nieuws van den Dag voor Ned.-Indië	daily
Bataviaasch Nieuwsblad	"
Bataviaasch Handelsblad	"
Java Bode	"
Advertentie Bode	twice a week
Het Indische Leven	weekly
De Banier	"
Vrijzinning Weekblad	"
De Taak	"

at Semarang:

De Locomotief	daily
Het Dagblad	"
De Beweging	weekly

at Sourabaya:

Soerabajaasch Handelsblad	daily
-------------------------------------	-------

	Nieuwe Soerabaja Courant	daily
	Soerabajaasch Nieuwsblad	"
	Weekblad voor Indië	weekly
at Bandoeng:		
	Preanger Bode	daily
	De Bandoenger	"
	Algemeen Landbouweekblad voor Ned.-Indië . .	weekly
	Java Post.	"
at Buitenzorg:		
	Archipelpost	twice a week
at Djokjakarta:		
	Mataram	daily
	Djokja Vooruit	"
at Sourakarta:		
	Nieuwe Vorstenlanden	daily
	De Wekker	weekly
at Malang:		
	Jahn's Advertentieblad	twice a week
at Kediri:		
	Kedirische Courant	daily
at Medan:		
	Sumatra Post	daily
	Deli Courant	"
at Padang:		
	De Padanger	daily
	Sumatra Bode	"
at Sabang:		
	Sabangsch Nieuwsblad	twice a week
at Kottaradja:		
	Nieuwsblad voor Atjeh.	twice a week
at Macaassar:		
	Macassaarsche Courant	daily
	Dagblad Celebes	"
at Bandjermasin:		
	Borneo's Advertentieblad	twice a week
at Amboina:		
	Ambon Vooruit	twice a week

Periodicals appearing in a Native language:

at Batavia:		
Sin Po		daily
Perniagaan		"
Neratja		"
at Semarang:		
Warna Warta.		daily
Djawa Tengah		"
at Sourabaya:		
Pewartia Soerabaja.		daily
Octoesan Hindia		"
Thjioen Thioe		"
at Bandoeng:		
Kaoem Moeda		daily
at Medan:		
Andalas		daily
at Padang:		
Sinar Sumatra		daily
Octoesan Melajoe		"
at Macassar:		
Sinar Matahari		daily

The daily papers receive their news from the entire Dutch East-Indies, Holland and the Orient (i.e. Singapore, Penang, Calcutta, Bombay, Tokio and Shanghai) by means of the press bureau „Aneta” (Algemeen Nieuws- & Telegraafagentschap), established at Weltevreden in 1917, which press bureau, besides its head office at Weltevreden, has branch offices at Batavia, The Hague and Sourabaya.

This bureau also supplies the press in Holland with news from the Dutch East-Indies and the Orient. In the near future it will open a telegraph service between Japan, the Dutch East-Indies and Holland.



FRANCIS PEEK & Co., LTD.

Head-office:

PEEK HOUSE, 20 EASTCHEAP, LONDON, E. C. 3

— and at —

STRAITS-SETTLEMENTS

Singapore and Penang

JAVA

Batavia, Sourabaya, Semarang

Bandoeng and Soebang

SUMATRA

Medan and Padang

CELEBES

Macassar



Representing the following Shipping Companies:

The Peninsular & Oriental Steam Navigation Co.

Independent Steamship Corporation

Pacific Mail Steamship Company

China Mail Steamship Company, Ltd.

The Robert Dollar Co.

Toyo Kisen Kaisha

Mitsubishi Shoji Kaisha, Ltd.



Telegraphic-address (all offices)

FRANPEKOE

ANEMAET & Co.

SOERABAIA



Office of Administration

Directors of
Sugar, Coffee, Rubber,
Tea-Estates. Loans granted
against securities. Purchase
and Sale of Bonds and shares



REYNST & VINJU

BATAVIA

Nederlandsche Handel-Maatschappij (Netherlands Trading Society)

Amsterdam

Established by Royal Charter in 1824

Capital (paid up) . . f 80.000.000.—

Reserve Fund . . . f 14.590.545.—

Special Reserve Fund f 17.000.000.—

Branches in Holland: Rotterdam, The Hague

Eastern Head-office: Batavia

Eastern branches: Bandjermasin, Bandoeng, Cheribon, Djember, Djokjakarta, Hongkong, Kobe, Kota-Radja, Lungsa, Makassar, Medan, Padang, Palembang, Pekalongan, Penang, Pontianak, Rangoon, Semarang, Shanghai, Singapore, Sourabaya, Soerakarta (Solo), Tebing-Tinggi (Deli), Tegal, Telok Betong, Tjilatjap, Weltevreden

Correspondents in the principal towns of the world

Purchase and sale of bills of Exchange and Telegraphic Transfers. Collections. Opening of Credits by mail and by telegraph. Letters of Credit issued. Deposits taken. Opening of Current Account. Loans granted against securities. Purchase and Sale of Bonds and Shares. Safe deposit. Consignment and Sale of Products. Purchase and Sale of Foreign Banknotes and Coins. All other Banking-business transacted.

Koninklijke Paketvaart ♦ Maatschappij ♦ (Royal Packet Navigation Company)

Regular Mail-, Passenger- and Freight-service under contract with the Government of the Dutch East Indies, between the ports of the Netherlands Indian Archipelago and to Singapore, Penang and Australia.

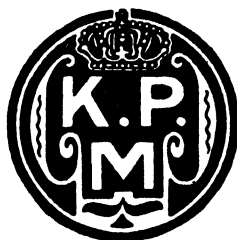
Weekly special Fast-Service between Java, Singapore and Belawan Deli by the twin screw steamers „Melchior Treub" and „Rumphius".

Bi-monthly service from Java to Brisbane, Sydney and Melbourne vice versa by the modern fitted steamer „Houtman".

In 1918 the Company carried 676.923 passengers and 3.001.092 tons of cargo and her ships covered 3 026.340 nautical miles being more than 140 times the length of the Equator.

With a fleet of 93 steamers running on over 50 different lines, 300 ports throughout the Netherlands Indian Archipelago are connected regularly with the outer world.

For rates, time tables, etc. apply to the Head-Offices of the Company at Amsterdam and Batavia, the representative in Sydney and the Agents in other ports.



N. V. Soerabaia Veem

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TIEDEMAN & V. KERCHER

Cable-Address:
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Own WOOD discharging place, capacity of cranes 400 M³ daily, up to weight of 5 tons.

Special establishment for storing and assorting COFFEE.

Godownspace on the quay 15000 M² and on different parts of the rivers 20000 M².

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CODES:

A. B. C. 5th ED., MERCUUR 3rd ED.,

BENTLEY

CABLES: DAT, SOERABAIA

KOLONIALE HANDEL MAATSCHAPPIJ

Head-Office
B A T A V I A (Java)

Branch-Office
PONTIANAK (Borneo)

IMPORTERS AND EXPORTERS

(GENERAL)

(PRODUCE)

CORRESPONDENCE SOLICITED

Cable-Addresses:
KOHAMY-BATAVIA
KOLONIALE-PONTIANAK

Code:
A. B. C. 5th. EDITION

The Bank of Taiwan, Ltd.

(Taiwan Bank)

Incorporated in Japan 1899

Capital 60.000.000 yen || Reserve 7.030.000 yen
Paid up 37.500.000 yen

BRANCHES:

- Japan :** Kobe, Osaka, Yokohama, Tokyo, Moji.
Formosa : in twelve famous towns.
China : Shanghai, Kinkiang, Hankow, Foochow, Amoy, Swatow, Canton.
Other Places : Hongkong, Singapore, Bombay, London, New-York, Bangkok.
Java : Batavia, Semarang, Soerabaia.

LONDON BANKERS:

London Provincial and South Western Bank, Limited
London Country Westminster and Parr's Bank, Limited

The Bank is incorporated by special charter of the Imperial Japanese Government, and is authorised to issue its own notes in Formosa, being under the special supervision of the Government.

The Bank transacts General Banking and Foreign Exchange Business, undertakes Trust Business and acts as Business Agents for other Banks.

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for U. S. A. and Canada**

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Provisions and Drinks, Rosin, Paints, Oils, Explo-
sives, Paper etc.**

References:

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thern America.**

All codes used

Butterworth & Co.

Semarang and Sourabaya (Java)

Honkong Branch:

PENTREATH & Co., Alexandra Building

Partners

R. Butterworth.
W. D. Ross
G. A. Pentreath

Semarang

C. S. Martin, sign p. p.

Sourabaya

D. Odink, sign. p. p.
A. Koops, „ „
D. ten Klooster, sign p. p.

Hongkong

C. B. Brooke

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Sugar, Rice and General Products

„SOCIETA MARMI ITALIANA“

SOURABAYA

(Dutch East Indies)



Agenzia Marittima Italiana

Agents of the Italian Ministry for Transport

✂ from the Dutch East Indies to Italy ✂

Naamlooze Vennootschap

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(Insulinde Oil Mills Ltd.)

Capital Guilders 30,000,000,00

Head-office: AMSTERDAM

Eastern main office: BANDOENG (Java)

**Sole Importers in America: Java Coconut Oil Co,
120 Broadway, NEW-YORK**

Factories: Kediri, Blitar, Keboemen, Rangkasbetoeng,
Banjoewangi (Java), Padang (Sumatra)
Macassar (Celebes).

Tankstations: Tandjong Priok (Batavia), Sourabaya, Tjilatjap,
Banjoewangi, Emmahaven (Padang), Macassar,
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The company owns tanksteamers for the effec-
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Cables: Necknarf Amsterdam. — Coconut Bandoeng
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proved, Mercury, Private

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Kapoc seed oil

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Edible oils

Soap

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Samarang

(Established in 1893)

Sole Proprietor : Majoer OEI TIONG HAM

Managing Director : B. I. TAN

Export Sugars, Copra, Kapok, Kapokseeds,
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etc. etc.

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Kian Gwan Tjan — Singapore

Agencies Kian Gwan Western Agency Ltd., London
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ESTABLISHED BATAVIA 1918

President:

Majoor der Chineezen Tjong A Fie, Medan

Directeuren:

Khoe A Fan

Lay Soen Hie

Capital. . . . f 30.000.00 Paid up f 10.000.00

Grants drafts and buys gold money, makes advances on approved security, receives Deposits and allows interest thereon, and in general transacts all other usual Banking Business

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London

Sourabaya

(Java)

59, Eastcheap, Mincing Lane House

Codes: Mercur, A.B.C. 5th Edition, Broomhall, Bentley

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The Standardised Disinfectants Co. Ltd., in The Dutch East
Indies etc., etc.

STROOHOEDEN VEEM, Limited

SOURABAYA, Java (Neth. Indies)

Head-office: Bibliostraat 17

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Clearing, warehousing & forwarding of all sorts of merchandise.

Warrants issued.

Special plants for hulling and sorting of Coffee.

Drying plants for Coffee, Copra, Maize etc.

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OSAKA-office:

No. 25 Kobatacho, Kitaku

JAVA-offices:

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Japanese and American general
manufactured goods, American
steel and iron materials ◇
Java and East Indian products

Algemeene Ned.-Indische Electriciteit Maatschappij of Amsterdam

Head-office for the Indies;

Sourabaya

- ¶ This Company was established in 1909, starting with a share capital of 6.000.000 guilders and holding concessions for the electrification of different places in Java and the exploitation of several waterpowers.
- ¶ The original scheme of construction has been worked out about three years since and the Company at present possesses six central power houses, viz., two in Sourabaya, one in Semarang, one in Malang, one in Pasoeroean and one in Djokja together representing a capacity of ± 20.000 H. P.
- ¶ So rapid has been the development of the business of the Company that already important enlargements have proved necessary; these are now in course of construction.
- ¶ The system adopted by the Company is that of three phase circuit with ± 5700 Volts high tension and 180/190 Volts for consumption. Electric current is supplied for lighting and to a considerable extent also for power purposes.
- ¶ Although Java is not one of the countries in which the use of electric energy may be supposed to be generally assumed, the fact is, that in those places where the Company undertook its supply, its popularity has reached a remarkable degree. In nearly every house or shop of some importance electric light is found, while also many industries, some of them governmental, are regular consumers of current. The enlargements referred to above are, therefore, partly meant to meet the ever-increasing demand of the latter. It may be derived from the above statement that the tariffs adopted by the Company have proved themselves quite economical. As a matter of fact they are decidedly moderate and fitting to the demand.
- ¶ For those not acquainted with tropical countries in general it is perhaps not superfluous to suggest the otherwise easily comprehensible fact that electric light being a cold light is, especially for Europeans, the most preferred means of lighting there. Whilst for industries it is generally understood, that the carelessness in handling other machinery and the general lack of skill of native labourers, makes the easily manageable electro-motor also the most economical and reliable driving machine.
- ¶ Of course the supply of electric energy involves many other possibilities as, f.i., the use of electric fans, automobiles, household appliances, etc.
- ¶ It makes a considerable difference as regards comfort in living conditions in a country like Java.

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(Incorporated in Japan 1880)



Head-office: Yokohama, Japan

Capital ...Yen 100.000.000.— || Reserve:....Yen 44.000.000.—
Paid up...Yen 61.000.000.—

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Chi-Nan, Peking, Dairen, Kai-Yuan, Harbin,
Kobe, Nagasaki, Shimonoseki, Lyons, Buenos
Aires. Manila, San Francisco, Seattle, Bombay,
Rangoon, Singapore, Shanghai. Tsingtau, Tient-
sin, Newchwang, Fengtien, Changchun, Rio de
Janeiro, Vladivostock.

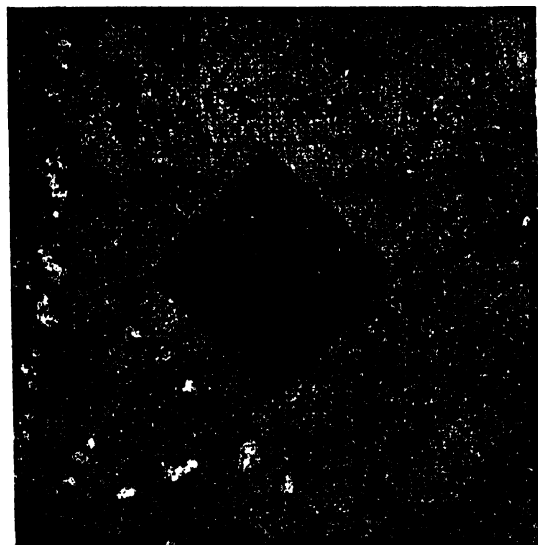
Java : Batavia, Sourabaya

Correspondents

in all principal centres of the world

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*Battick-trade and
Battick-manufacture*



*Manufacturers
of
all kinds of
battick-works*



*Wholesale
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General Importers

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Branch-offices : Sourabaya
Semarang
Makassar

Head-office **Sumatra** : Medan
Branch-office : Belawan

Head-office **Str. Settlements** :
Penang

Steamship-Agencies :

Head-office **Java** Batavia
Branch-office : Sourabaya
Semarang
Makassar

Head-office **Sumatra** : Medan
Branch-office : Belawan

Head-office **Str. Settlements** :
Penang

Vereenigde Javasche Houthandel-Maatschappijen

Amsterdam

(Holland)

Samarang

(Dutch East Indies)

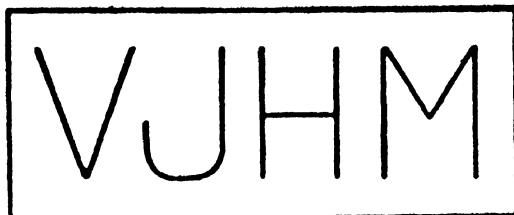
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Cables



JAVAHOUT



Trade-mark



Timber Merchants

**Java Teak,
Hardwoods,**

Hewn Logs, Squares and Flitches,
from Sumatra and Borneo:

Ironwood or Billian

Ressak- and Merawan Wood

Petanang- and Krewing Wood.

For Europe and America please apply to Head-
Office at Amsterdam.

For Asia, Australia and Africa information given by
Samarang-Office.

Codes Used:

A. B. C. Code 5th. Ed., Mercuur Code, Bentley's Code

Handelsvereeniging Holland-Java

Rotterdam

Sourabaya



**Exporters
of
Dutch East Indian Produce**

Netherlands Harbour Works

Incorporated at Amsterdam

Head-office: AMSTERDAM

Offices: Bandoeng, Peking, Chefoo, Shanghai

Authorised Capital f 5.000.000

Consulting Engineers and Contractors for Public Works

Technical Managing Directors: A. G. Lamminga c.e., Formerly Engineer in Chief
of the Netherlands Indian Government
O. C. A. van Lidth de Jeude, Formerly Civil Engineer
of the Netherlands Government

Financial Managing Director: R. H. van Dorsser

Telegraphic-address: Dredgers

**HANDEL-MAATSCHAPPIJ LIAN HIEN
BATAVIA**

(ESTABLISHED IN 1890)



**THE LEADING CHINESE IMPORTERS OF PIECE
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SOLICIT SAMPLES FROM MANUFACTURERS**

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All codes



**The Harley-Davidson Motor Comp.
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Large stock

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Automobile Accessories

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SUMATRA

Medan and Padang

JAVA

Batavia, Sourabaya, Semarang
Bandoeng and Soebang

CELEBES

Macassar



Secretaries and Commercial Agents to Public Companies

Agents for the following Companies:

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The Anglo-Dutch Plantations of Java, Limited
The Java Investment, Loan & Agency, Limited
The Besoeke Plantations, Limited
The Sampang (Java) Rubber Plantations, Limited
The Preanger (Java) Rubber Co., Limited
The Medinie Rubber Company, Limited
The Bantardawa Rubber Estates, Limited
The Tjiwangie Tea Estates, Limited

Sumatra

Way-Halim (Sumatra) Estates, Limited
The Anglo-Asiatic Co., Limited
The Java Investment, Loan & Agency, Limited
Sumatra Land Syndicate.

The above Companies control a total area of about 500,000 acres, of which some 50,000 acres are under cultivation with Rubber, Tea, Coffee and Cinchona.

Telegraphic-address (all offices):

FRANPEKOE

Cable-address:
„Platon"-Batavia

Codes Used:
A. B. C. 5th. Edition
Lieber's, Bentley, Private Codes

L. Platon

Established 1843

Head-Office: Batavia (Java)

Branches at:

Sourabaya, Semarang, Paris and Liverpool

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Specialities:

Import: Wines and Spirits, Provisions, Piece Goods, Hosiery, Leather, Metals Sundries.

Export: Rice, Rubber, Coffee, Pepper, Tapioca, Cocoa, Peanuts, Cassia, Annato, Seeds; Kapoc, Gumdamar, Gumbenzoe, Citronella oil, Kananga oil, Bamboo and Pandan Hats, Sisal Hemp.

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Semarang

Maclaine Watson & Co.

Batavia

Fraser Eaton & Co.

Sourabaya

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The Asiatic Steam Navigation Company, Ltd.
The British India Steam Navigation Company, Ltd.
The Peninsular and Oriental Steam Navigation Company
La Compagnie des Messageries Maritimes
The Canadian Pacific Ocean Service, Ltd.
The China Navigation Company, Ltd.
The Indo-China Steam Navigation Company, Ltd.
The West Australian Joint Service
The Union S. S. Company of New Zealand, Ltd.
The Eastern and Australian Steamship Company, Ltd.
The American and Manchurian Steamship Company, Ltd.
The Apcar Line.
The Shire Line, Kishimoto Kisen Kaisha, Nanyo Yusen Kaisha
Udenlandske Skibsmægleres Centralkontor

KOLONIALE BANK

ESTABLISHED 1881

Capital..... f 15,000,000 Issued..... f 13,750,000

Reserve funds 1918 f 3,272,000

Head-office: Amsterdam

Branch-offices: Sourabaya and Semarang

Management of agricultural industries both for own account and for account of others; at the end of 1918 possessing and/or providing working capital to and/or managing:

13 sugar factories

47 estates growing Coffee, Rubber, Cinchona, Tea, Tobacco, Fibre etc.

J. A. WATTIE & Co., LIMITED

SOURABAYA

LONDON

SHANGHAI



ESTATE AGENTS GENERAL EXPORTERS

RUBBER

COCOA

BISAL HEMP

COFFER

SUGAR

PEPPER

INSURANCE AGENTS



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BINATION, CRUBBERS, BROOM-
HALLS COMBINATION. PREMIER

CABLES:

WAVITO-SOURABAYA

Societa Anonima „Itala Garage”

Sourabaya (Dutch Indies)

Lemahpoetro No. 24 — 26 — 28

Surface 8000 M²

Auto-trade, Carrosserie-factory and wholesale accessories.

Sole representative for the Dutch Indies of the Itala, Scat, Chiribiri, Enfield-Allday, Varley-Wood and G. N. auto's

Panhard Motortrucks, Zenith Motor-Cycles etc.

Official Stockist of the Michelin Auto-Tires etc.

N. V. Import Mij. P. J. Janssen & Co.

Bandoeng

Importers and distributors of

**Motorcars, Motortrucks and
Accessories**

Wholesale only

Ross, Taylor & Co., Ltd.

Sourabaya

Batavia



Managing Directors:

The United Java Oil Mills Ltd.



Agents:

**Estates; Marine-, Fire- and Motorcar
Insurance Companies**



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Liok Hap Kongsie

Djokjakarta

**Manufacturers of all kinds of carri-
ages, auto-bodies and paints in
different colours**

Fraser Eaton & Co, Sourabaya

General Produce Merchants

London-Agency-MacLaine & Co., 14 Fenchurch str. E. C.

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China Mutual S. N. Co. Ltd.
Nederlandsche S. M. „Oceaan”
Peninsular & Oriental S. N. Co.
British India S. N. Co.
Asiatic S. N. Co., Ltd.
China Navigation Co.
Indo China S. N. Co.
American & Manchurian Line (Bucknall Steamship Lines, Ltd).

West Australian S. N. Co. Ltd.
Union S. S. Co. of New Zealand, Ltd.
Eastern & Australian S. S. Co., Ltd.
Canadian Pacific Ry (Ocean Services, Ltd.)
Nanyo Yusen Kabushiki Kaisha
Kishimoto Kisen Kaisha, Ltd.
Apcar Line of steamers
Bombay & Persia S. N. Co. Ltd.

Insurance

Directors of the London and Java Assurance Agencies Ltd.

Representing the following Companies :

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Alliance Assurance Company Ltd.
London Assurance Corporation.
Northern Assurance Company Ltd.
North British & Mercantile Insurance Coy. Ltd.
Norwich Union Fire Insurance Society Ltd.
London & Lancashire Fire Insurance Coy. Ltd.
Guardian Assurance Coy. Ltd.
Commercial Union Assurance Coy. Ltd.
Employers' Liability Assurance Corp. Ltd.
London & Scottish Assurance Corp. Ltd.
South British Insurance Coy. Ltd.
Royal Insurance Coy. Ltd.
Tokio Marine & Fire Insurance Coy. Ltd.
Eagle Star & British Dominions Ins. Coy. Ltd.

Marine

London Assurance Corporation.
Alliance Assurance Company Ltd.
Ocean Marine Insurance Company Ltd.
World Marine & General Insurance Coy. Ltd.
Sea Insurance Company Ltd.
Thames & Mersey Marine Insurance Coy. Ltd.
Guardian Assurance Coy. Ltd.
London & Scottish Assurance Corp. Ltd.
Employers' Liability Assurance Corp. Ltd.
Tokio Marine & Fire Insurance Coy. Ltd.
South British Insurance Coy. Ltd.
Royal Insurance Coy. Ltd.
Triton Insurance Company Ltd.
Yang-tze Insurance Association Ltd.
New Zealand Insurance Company Ltd.
Union Insurance Society of Canton Ltd.

Motorcar & Accident

Northern Assurance Company Ltd.

Earthquake

{ Guardian Assurance Coy. Ltd.
Eagle Star & British Dominions Ins. Coy. Ltd.

Settling Agents

The United Insurance Coy. Ltd.
The Yokohama Fire, Marine, Transit & Fidelity Ins. Coy. Ltd.
Maatschappij van Assurantie, Discontoeering en Belooning der
Stad Rotterdam. (Bicker Caarten & Obreen.)
The Fuso Marine Insurance Coy. Ltd.
The Kobe Marine Transport & Fire Ins. Coy. Ltd.
Newark Fire Insurance Coy.
Legal Insurance Company,
Canton Insurance Office Ltd.
North Queensland Insurance Coy. Ltd.
National Insurance Coy. Ltd.
Queen Insurance Company of America

Banks

The Mercantile Bank of India Ltd.

Batavia Office : MacLaine Watson

Semarang-office : Mc. Neill & Co.

Tiedeman & van Kerchem

Established at Batavia in 1854

Head-office **Batavia**, with Branches in **Amsterdam**
and **Sourabaya**

Partners:

S. W. Zeverijn
R. von Hemert
W. C. Loudon
G. L. J. Holle
Mr. S. Baron van Heemstra
Mr. H. H. Reyers
W. N. van den Berg

Controlling: 26 Tea-estates 2 Rice-estates
15 Rubber-estates 1 Coca-estate
9 Coffee-estates 9 Sugar-factories
7 Cinchona-estates 3 Ice-factories

The partners at Batavia are Managing-Directors of
two **Insurance Companies** and Agents of several
European **Insurance Companies**

Agents of the **Deli-Batavia-Maatschappij**

Managing-Directors of the **Soerabaia Veem**

The firm effectuates yearly large orders in shares and
bonds in Java and Europe

Kölner Handels Gesellschaft

Overseas Import and Export

Offices :

Hamburg, Copenhagen, Batavia, Semarang
Sourabaya, Medan



Manufacturers

of Hardware

Importers

of all kinds of metals, steel, tool-, Agricultural-Implements etc.

Exporters

of Rottan, Hides, Oils etc.

Technisch Import Bureau

§

Sourabaya, Batavia (Java)

§

Telegraphic-addresses:

„TIBUR” Soerabaia

„TIBUREAU” Batavia

Codes in use:

Bentley's complete phrase code

A. B. C. 5th. Ed.



Importers of

**Machineries for Oil Plants, Sugar Estates,
Rubber Estates, Coffee Estates, Rice Mills**

Rails, locomotives, locomobiles, portable engines, boilers pumps, water filters, crude oil engines, drilling machines, lathes, chains, anvils, vices, gas tubes and fittings, iron and steel, galvanized iron wire fencing, brass and C. I. valves, copper and brass tubes, beltings, packings., wire netting, wire nails, sanitary articles, electrical machines and accessories, caustic soda, sulphuric ammonia, etc. etc.

Nederlandsch Indische Handelsbank

(Netherlands India Commercial Bank)

Established 1863

Authorized Capital:	f 60.000.000,—	£ 5.000.000.—/—
Paid-up Capital:	.. 45 000.000,—	.. 3.750.000.—/—
Reserve fund (about):	.. 29.000.000,—	.. 2.416.667.—/—

Head-Office in Holland: **Amsterdam** with Sub-Office at The Hague.
Eastern Head-Office: **Batavia** with Sub-Office at Weltevreden.
Eastern Branches: **Java**, Bandoeng, Cheribon, Indramajoe, Pekalongan, Probolinggo, Tegal, Tjilatjap, Semarang and Sourabaya.
Lombok, Ampenan.
Sumatra, Medan.
Celebes, Macassar and Menado.
Singapore and Hongkong.

Correspondents in Europe, United States and Japan:

London: London Joint City & Midland Bank Ltd., Swiss Bank Corporation and Williams Deacons Bank Ltd.
New York: Guaranty Trust Company of New York, Goldman Sachs & Co. and National Park Bank of New York.
San Francisco: Anglo & London Paris National Bank, Crocker National Bank and Wells Fargo Nevada National Bank.
Japan: The Sumitomo Bank Ltd. and One-Hundredth Bank.

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Larsen & Co.,

Amsterdam

Medan

Thompson Larsen Limited

Singapore

Batavia



Estate agents

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Autohandel en Technisch Bureau

Wolseley-Palace

voorheen Tasche & Co.

Sourabaya

Branches: Semarang, Bandoeng

Agents: Tasche, Medan

Garage Meester Cornelis

G. L. Mesman-Schultz



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Rainier Motor Corporation, New-York

Essenkap Products Co., Chicago

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Bandoeng

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GIJSELMAN & STEUP

Cable-address:
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Semarang Gymnast
Soerabaja Simplon

General Brokers
Batavia, Semarang
Sourabaya

Codes: A. B. C. 5e Fd.
Mercuurcode 3e Ed.
Ned. Ind. Cijfercode and
Private codes



Handling: Sugar, Rice, Coffee, Pepper, Gum Damar, Arachides,
Capoc, Maiz, Tapioca and other products.

Procure: Bills of Exchange, Shares, Insurances, Loans and mortgages etc.
Buyers and sellers real Estate.



Are daily communicated from Amsterdam about quotations
principal Indian and European shares

N. V.
Bankvereeniging Be Biauwan Tjoan
Semarang: (Java)

Managing-Directors: Kwee Yan Tjo
en S. J. Be

TACK & BOERS

SEMARANG

SOURABAYA



CODES USED

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MERCUR**

GENERAL BROKERS

SOCIETA MARMI ITALIANI

SOURABAYA

DUTCH EAST INDIES



IMPORT

of all merchandise

EXPORT

of all products, i. e. sugar, coffee, tea, tapioca, pepper,
cloves, nutmegs, mace, copra, kapok, rattans etc.

SPECIAL BRANCH

for European and American building-materials, statues,
monuments, artistic execution of tombs and tombstones.
Paving of floors with marble and mosaic tiles.

Société Franco-Néerlandaise de Culture et Commerce

*Limited Liability Co with a capital of 6.000.000 dutch florins 12.600.000 franc, divided
into 1200 shares of 5000 florins each.*

Head-Office: LA HAYE (THE HAGUE), 186 Noordeinde
Principal Branch: 5 Rue de Stockholm, PARIS.

I.— Constitution of the Society:

1^o.— The Articles regulating the Co have been approved by Her Majesty the Queen of Holland by a decree dated February 25th. 1908 (No. 54).

2^o.— The S. F. N. de C et de C. has been constituted by an act passed March 5th 1908 in the presence of Mr. Stoop, notary at The Hague.

3^o.— The legal publication was mentioned in the „Journal Officiel de la République Française, 16th March 1908" (Bulletin annexed).

II.— Composition of the Administrative Council:

Messrs: Louis Cordonnier — President	
Raymond du Boullay — Vice President	Messrs: Maurice Tilley
Jean Saint-Girens — Managing Director	— „ Joseph Enthoven
Le Comte Jacques d'Arlinecourt	„ Léon Clerc
Edmond Paix	„ Jacques Bornard
Edouard Motte	„ Julien Thibaud

III.— Land and Estates.

The Society possesses in Java land representing altogether 11.000 hectares.

2.510 hect. have been planted up with rubber.

750 „ „ „ „ „ „ „ tea.

850 „ „ „ „ „ „ „ coconut.

making a total planted area of 4.110 Hect.

IV.— Productions.

1^o.— The rubber production has been as follows:

1913.....Kgs.	27.482	1917.....Kgs.	619.847
1914..... „	114.614	1918..... „	816.774
1915..... „	251.829	1919..... „	935.000
1916..... „	412.746		

2^o.— As for tea, the yearly production was on the 31st Dec 1919, 544.000 french pounds.

That production will certainly increase periodically for a long time and the Estate is a very promising one.

3^o.— We believe that the Estate will be a very great help to the Co at the end of 1920.

V.— Financial Results.

The figures stated below will show the financial position since the Estate became productive:

	Net Profits	Dividends per share
1914	fl. 152.801,08	—,—
1915	„ 565.842,41	300
1916	„ 874.663,66	500
1917	„ 881.858,50	300
1918	„ 527.657,76	300

The reduction of the profits for the year 1918 is due to the fact that a large area in new plantations had just begun to be tapped.

For the last year the cost of production has become again normal; namely on 30th Nov. the cost was f 1. 0,941 per Kilogr. for the whole rubber plantations. As for the estates of „Lemah-Neundeut" which was the first to be tapped, the cost was at the abovementioned date f 1. 0,512.

The selling price of our rubber is now appreciably higher and has attained about 2 f 1.80 per Kil.

As for tea the cost of production is actually -0 f 1,36 per french pound, while the net selling price, after deducting transport and other charges is -0 f 1.63.

Bandoong, January 20th, 1920.

Lampen-Magazijn
Firma Joseph Rute
Sourabaya

(Java)



Importers of
Gasoline and
Kerosine Lighting Systems



We import

**Lamps, lanterns, tanks, air-pumps,
stoves, hollow brass wire, ovens,
non-electric fans, blowtorches,
electric flashlight, electric batte-
ries, incandescent mantles, all
sort of glassware like chim-
neys, plain and fancy sha-
des and globes, mica
chimneys, beaded frin-
ges, novelties, com-
fort-irons, etc.**



Cable-address: RUTE-SOERABAIA

A. B. C. code 5th Edition

Correspondence invited

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INDO JAVA RUBBER PLANTING & TRADING Co. LTD.

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Arrack Distillery

Estate Agents

Tapioca Mills

Fire Insurance

EXPORT SPECIALITIES:

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IMPORT SPECIALITIES:

Piece goods, Provisions, Liquors, Iron, Haberdashery a.s.o.

INDISCHE EXPLOITATIE MAATSCHAPPIJ
SOURABAYA



Cable-address
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Bentley

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as Ironwood, Borneoteak, Siwo, Campher, Kroweng, etc.

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as coffee, pepper, capoc, tapiocaflours, tobacco, vegetable
oils, copra, gums, rubber, etc.

TECHNISCH BUREAU SOENDA

BANDOENG (JAVA)

DUTCH EAST-INDIES

Head-office: Bandoeng

Branch-offices: Sourabaya, Batavia, Cheribon, Malang

Buying-offices: New-York (U. S. A.), Sydney (Australia),
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Importers of all classes of

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Woodworking

Waterpower and

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} Machinery

Steam Engines, Boilers, Internal Combustion Engines for Town
Gas, Suction Gas, Kerosine, Paraffine, Crude Oil, etc.

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Complete plants for handling:

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VAN DER MARK-RUYS BATAVIA

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Export

and

Shipping

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Cable-address „VICTORIA SOURABAYA”

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HEAD-OFFICE: TOKIO



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MANAGING DIRECTORS

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DIRECTORS AND AGENTS

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Java-branches: Semarang, Sourabaya

H. G. Th. Grone

*General-Exporters Java-
produce*

*Cable-address:
Semarang, Grone
Soerabaya, Kwast*

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Padang

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Shanghai



T. E. M. A.

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Tobacco

Rubber

Tea

Coffee

Rice

Estates

Specialise in:

Engineering Machine Tools — Electrical and Mining Machinery
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A.B.C. 5th Ed. improved

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HANDELSVEREENIGING
BATAVIA (JAVA) SOURABAYA (JAVA)
AMSTERDAM (HOLLAND)**



Exporters of Pepper, Coprah, Tapioca, Sugar, Peanuts, Gum
Damar, Coffee, Kapoc seeds, Castor seeds, Rice, Tin,
Rubber, Maize, Hats, Coconutoil
a.s.o.

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v/h M. ADLER**

Head-office:
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Cable-address: LIVELY

Branch-offices:
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BIRMINGHAM
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Cheribon, Rotterdam

A. B. C. Code 5th Ed.
Mercur Code 2nd Ed.

Established 1859

Jacobson v. d. Berg & Co.

Samarang - Sourabaya - Batavia - Cheribon - Rotterdam



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N.V. Technisch-Bureau voorheen

J. F. R. Hellendoorn

Sourabaya



The Hague

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Spirits

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successors**

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etc. etc.

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ESTABLISHED SINCE 1882

AMSTERDAM

BATAVIA

SOURABAYA

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H. N. LONEY & Co.

Sourabaya



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Sole Agents in Java
for

Reckitt's Blue
Brasso

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LIMITED**

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Marolo, Amsterdam
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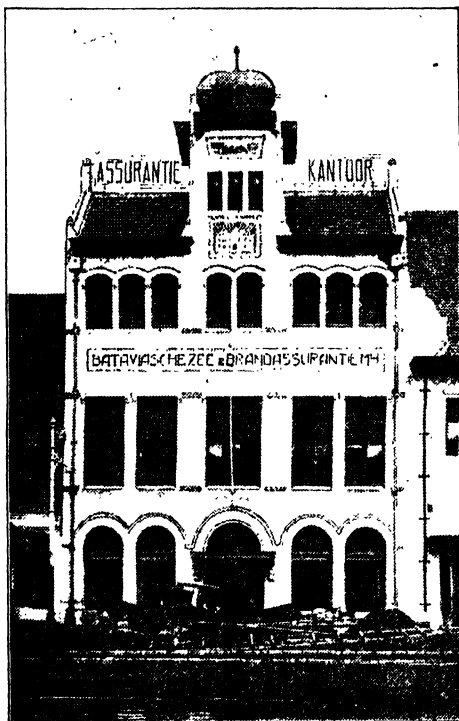
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